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The DENTAL DIGEST

March, 1933

The approach to beautiful Loetschental Valley, Switzerland. The inhabitants of the valley until recently have been isolated from access to modern foods, and have had almost complete immunity to tooth decay.

Beginning In This Issue: **WHY DENTAL CARIES WITH MODERN CIVILIZATION?**

By Weston A. Price, D.D.S., M.S., F.A.C.D.

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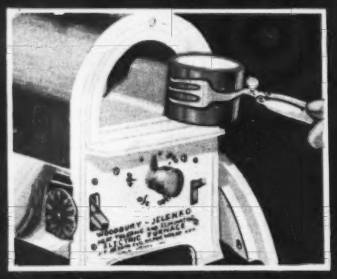

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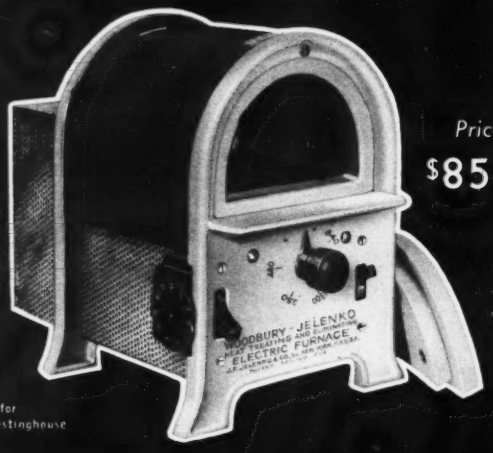

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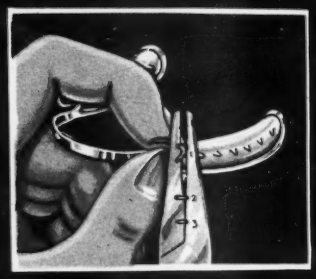

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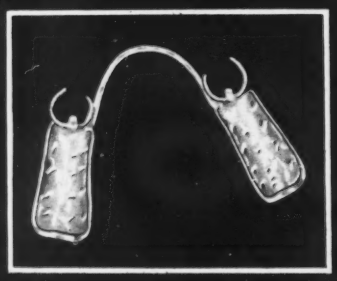

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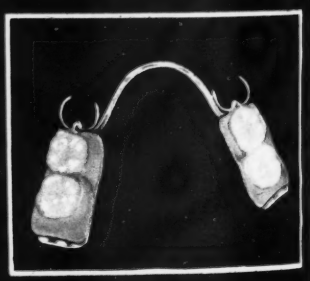

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The DENTAL DIGEST

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EDWARD J. RYAN, B.S., D.D.S., Editor

ETHEL H. DAVIS, A.B., Assistant Editor

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WHY DENTAL CARIES WITH MODERN CIVILIZATIONS?*

1. FIELD STUDIES IN PRIMITIVE LOETSCHENTAL VALLEY, SWITZERLAND

WESTON A. PRICE, D.D.S., M.S., F.A.C.D.
Cleveland, Ohio

ARE our modern civilizations worth the price we pay for them in loss of teeth and impaired health? Is it necessary? These questions have suggested the desirability of adding to our studies of modern civilizations the study of remnants of primitive civilizations for the secrets underlying their freedom from tooth decay and their admirable physiques. To the dental profession the concern is primarily for the development and continued efficiency of the dental organs. To humanity at large and all health interests the concern is for the development and preservation of the body in a state of high efficiency. In researches in all fields of biology which relate directly to human needs, the ultimate control is always provided in the great human clinic.

Just as generations come and go, so do civilizations. Each succeeding civilization has laid away records of physical development and skeletal perfection which can be exhumed thousands of years after they were made. No part of our ancestral bodily fitness has been so carefully preserved for our inspection as the quality of the teeth, the most permanent of all the body structures. Their resistance to disintegration constitutes the most important single factor underlying the science of anthropology. Just as obtains today, these prehistoric peoples and their teeth were the products of their foods. But what did they eat? This is the question with which we are profoundly concerned since they were able to develop teeth of perfection in form and structure, supported in arches of uniform symmetry and stability, such as to make our modern civilizations appear in comparison far less efficient in the matter of body building.

In practically all parts of the world one of the first effects of our so-called modern civilizations is to destroy the efficiency of the teeth. Whereas our primitive ancestors with their primitive diets were capable of developing and maintaining teeth almost 100 per cent free from dental caries, our modern civilizations completely fail in this regard, since nearly 100 per cent of the people suffer more or less from rampant tooth decay in certain periods of life. It is strange that so little effort has been made to inquire of remaining primitive peoples as to their habits of living and the selection of foods as standards of comparison; instead, the research has been largely conducted by searching the disintegrated tooth for the causative factors, which, alas, are not there. It is as though we would find the nature of lightning by studying the tree that had been killed by a bolt.

My approach to this problem has placed much emphasis on the direct effects of foods as made possible by the newer knowledge of vitamins and minerals as essential factors in nutrition. These effects have recently been made measurable with improved chemical procedures. The advance made possible by these methods has included clinical demonstrations that the control and prevention of dental caries are now possible by these means.[1] It remained, however, to be demonstrated that these vitamins and minerals were the controlling factors in the efficient diets of primitive people living on primitive foods.

Accordingly I undertook to study primitive peoples and their foods. This study included first an extended correspondence and search of the literature followed by field studies to find, if possible, remnants of those stalwart specimens of human development whose isolation has been their preservation. When the skulls of a group of 20,000 persons who were buried in a single valley were exhumed and examined, the teeth showed a remarkable freedom from decay, whereas the people living in that valley today have practically all suffered from dental caries and many of them in its most rampant form. Something has radically changed.

In my studies of the vitamin content in food, as emphasized in several research reports,[2] I found the vitamin content of milk and butter-fat to vary through a wide range in different places at the same season of the year and at different seasons of the year in the same places, and further, that the health levels of these places as indicated by morbidity and mortality data were practically always in the opposite phase with the vitamin levels as shown in this butter-fat product of grazing animals, thus seeming to be directly related to vital phenomena. While this vitamin factor tended to be higher in the summer than in the winter, it clearly did not follow the sunshine curve but did follow the quality of the pasturage or available food of the dairy animals. Rapidly growing young grass was practically always found to be the characteristic of the nutrition of the animals giving the high vitamin dairy products.

Some of the best samples of dairy products come from mountain valleys in the summer season or from the far north and far south latitudes. If milk and milk product vitamins as provided in various dairy products can be an important contributing factor to physical well-being, including dental health and freedom from caries for persons making dairy products an

*These reports are complementary to a detailed study, to be published in book form, which will deal with the etiology and control of dental caries and associated degenerations.

[1]Price, W. A.: Control of Dental Caries and Some Associated Degenerative Processes Through Reinforcement of the Diet with Special Activators (118),* J. A. D. A. **19**:1339 (August) 1932.

[2]Price, W. A.: Calcium and Phosphorus Utilization in Health and Disease: I. The Role of the Activators for Calcium and Phosphorus Metabolism. II. The Nature and Source of Calcium and Phosphorus Activators. III. Seasonal Variations in Butter-Fat Vitamins and Their Relation to Seasonal Morbidity (102),* Certified Milk, October, November, December, 1929. Some Contributing Factors to the Degenerative Diseases, with Special Consideration of the Role of Dental Focal Infections and Seasonal Tides in Defensive Vitamins (107),* *Dental Cosmos* **72**:1049 (October); **72**:1119 (November) 1930. New Light on the Control of Dental Caries and the Degenerative Diseases (108),* J. A. D. A. **18**:1189 (July) 1931. Some Means of Improving Human Life by Increasing the Vitamin Content of Milk and Its Products (110),* Bull. Internat. Assn. Milk Dealers, January 29, 1931. New Light on Some Relationships Between Soil Mineral Deficiencies, Low Vitamin Foods and Some Degenerative Diseases, Including Dental Caries with Practical Progress in Their Control (123),* Bull. Indiana State Dent. Assn., September, 1932.

*These numbers given in parenthesis are the author's personal serial references for the convenience of those desiring reprints of these articles.

important part of the diet, people sufficiently dependent on this product might be found to have high immunity. Similarly if native natural foods, including entire cereals, contain something unique and fundamental for the development of animal life, including human beings, this could also be studied in such communities.

With vitamins and minerals as the clue we went to Europe in 1931 and 1932 to search for groups of people situated in isolated districts who were sufficiently protected from modern civilization to compel them to eat only the natural foods and prevent them from substituting modern commercial foods. If these conditions could be found there would be provided a basis for a critical analysis of the controlling factors in primitive life in such a community. Mrs. Price has assisted splendidly in these field studies, both in the capacity of a dental assistant in sterilizing instruments and keeping records and especially in managing the groups of frightened children in such a way as to win their confidence. A shining coin always went a long way as a reward to those who gave good cooperation.

Officials of the Swiss government were accordingly consulted relative to the possibility of finding people in Switzerland whose physical isolation provided an adequate protection. We were told that the very physical conditions that would prevent such people from getting out to obtain modern foods or would prohibit commercial invasion would also prevent us from reaching them without hardship. However, owing to the completion of the Loetschberg tunnel, eleven miles long, and a railroad that crosses the Loetschental valley at a little less than a mile above sea level, as a part of a shortened railroad route to Italy, a group of about 2,000 people have recently been made easily accessible for study. Practically all the human requirements of the people in that valley, except a few items like sea salt, for centuries have been produced in the valley.

A bird's eye view of the Loetschental valley, looking toward the entrance, is shown on the front cover. The people of this valley have had a history covering more than a dozen centuries. The architecture of their wooden buildings, some of them several centuries old, indicates a love for simple stability, always adapted to expediency and efficiency, but not of the skyscraper variety. Artistically designed mottoes, many of them centuries old, are seen carved deeply into the heavy supporting timbers, both within and without the buildings, and are always expressive of devotion to cultural and spiritual values rather than material values. These people have never been conquered although many efforts have been made to invade their valley. Except for the rugged cleft through which the river descends to the Rhone valley, the Loetschental valley is almost completely enclosed by three high mountain ranges which are usually snow-capped. This pass could always be guarded by a small band against all possible attacking forces since artificial landslides could easily be released. The natural occurrence of these landslides has made the passage through the gorge hazardous, if not impossible, for months of the year. According to early legends of the valley, these mountains were the parapets of the universe, and the great glacier of the valley, the end of the universe. This glacier is a branch of the great ice field that stretches away to the west and south from the ice-cap of the Jungfrau and Monch. These mountains, however, are seldom approached from this direction because of these hazardous ice fields. The gateway to them with which the traveling world is familiar is from Interlaken by way of the Lauterbrunnen or Grindelwald valleys.

At the altitude of the Loetschental valley the winters are long and the summers short but beautiful and accompanied by extraordinarily rapid and luxuriant growth. The meadows are fragrant with Alpine flowers, with violets like pansies which bloom all summer in deepest hues.

The people of the Loetschental valley are a community of two thousand who have been a world unto themselves with neither physician nor dentist because they have so little need for them; nor do they have a policeman or a jail, nor need for them. The clothing has been the substantial homespuns made from the wool of their sheep. The valley has produced not only everything that is needed to wear but practically everything that is needed to eat. It has been the achievement of the valley to build some of the finest physiques in all of Europe. This is attested by the fact that many of the famous Swiss guards of the Vatican at Rome, who are the admiration of the world and the pride of Switzerland, have been selected from this valley, and it is every Loetschental boy's ambition to be a Vatican guard. Notwithstanding the fact that tuberculosis is the most serious disease of Switzerland as stated to me by a government official, a recent report of inspection of this valley did not reveal a single case. This was also told to me by the physician who made the inspection.

The people live largely in a series of villages dotting the valley along the river banks. The land that is tilled, chiefly for producing hay for feeding the cattle in the winter and rye for feeding the people, extends from the river and often rises steeply toward the mountains which are wooded with timber so precious for protection that little of it has been disturbed. Fortunately, there is much more on the vast extent of the mountain sides than is needed for the relatively small population. The forests have been jealously guarded since they are so greatly needed to prevent slides of snow and rocks which might engulf and destroy the villages. The valley has a splendid educational system of alternate didactic and practical work, which requires all children to attend school six months of the year and the other six months aid with the farming and dairying industry in which young and old of both sexes take part. The school system is under the direct supervision of the Catholic church, and the work is well done. The girls are also taught weaving, dyeing, and garment making. The manufacture of wool and clothing is the chief homework in the winter for the women.

No trucks or even horses or wagons, let alone tractors, are available to bear the burdens up and down the mountain sides. This is all done on human backs for which the hearts of the people have been made specially strong.

We are primarily concerned here with the quality of the teeth and the development of the faces that are associated with such splendid hearts and unusual physiques. I made studies of both adults and growing boys and girls, during the summer of 1931, and arranged to have samples of food, particularly dairy products, sent to me about twice a month, summer and winter. Since that time these products have been tested for their mineral and vitamin contents, particularly the fat-soluble activators. These samples are found to be high in vitamins and much higher in comparison than the average samples received from sources of commercial dairy products in American and European places.

Hay is cut for winter feeding of the cattle, and this hay grows rapidly. The hay proved on chemical analysis, which was made at my laboratory, to be far above the average for pasturage and storage grasses. Almost every household has goats or cows or both. In the summer the cattle seek the

higher pasturage lands and follow the retreating snow which leaves the lower valley free for the harvesting of the hay and rye and the turning of the soil by hand, since there are neither plows nor draft animals to drag the plows, in preparation for the next year's rye crop. A limited amount of garden stuff is grown, chiefly green foods for summer use. While the cows spend the warm summer on the verdant knolls and wooded slopes near the glaciers and fields of perpetual snow, they have a period of high and rich productivity of milk. The milk constitutes an important part of the summer's harvesting. While the men and boys gather in the hay and rye the women and children go in large numbers with the cattle to collect the milk and make and store cheese for the following winter's use. This cheese contains the natural butter-fat and minerals of the splendid milk and is a virtual storehouse of life for the coming winter.

I have been fortunate in having a helpful and happy contact with the distinguished prior of the valley who has been one of my principal interpreters. From him I have been able to learn much about the life and customs of these people. He has told me how they have recognized the presence of divinity in the life-giving qualities of the butter made in June when the cows have arrived for pasturage near the glaciers; how he gathered the people together to thank the kind Father for the evidence of his Being in the life-giving qualities of the cheese made when the cows ate the grass near the snow line. This worshipful program included the lighting of a wick in a bowl of the first butter made after the cows have reached the luscious summer pasturage. This wick is permitted to burn in a special sanctuary built for this purpose. The natives of the valley, without understanding its scientific significance, are able to recognize the superior quality of their June butter, and, without knowing exactly why, pay it due homage.

In one of our favorite childhood stories, we are told of the almost supernatural restoration of the little, sick and crippled heroine, for whom the book is named, Heidi, who was carried to the lovely mountainside cottage to drink the milk of the goats that feed on the luxuriant pasture and to eat the bread made of the whole rye of these fertile valleys. This is an event of frequent experience in the local legendary of the valley.

The nutrition of the people of the Loetschental valley, particularly that of the growing boys and girls, consists largely of a slice of whole rye bread and a piece of the summer-made cheese, about as large as the slice of bread, which are eaten with fresh milk of goats or cows. Meat is eaten about once a week. In the light of our newer knowledge of activating substances, including vitamins, and the relative values of food for supplying minerals for body building, it is clear why they have such healthy bodies and sound teeth. The average total fat-soluble activator and mineral intake of calcium and phosphorus of these children would far exceed that of the daily intake of the average American child. The sturdiness of the childlife permits them to play and frolic bareheaded and barefooted even in water running down from the glacier in the late evening's chilly breezes, in weather that made us wear our overcoats and gloves and button our collars. Some of these sturdy children are shown in Fig. 3 dressed in their homespuns. Of all the children in the valley still using the primitive diet of whole rye bread and dairy products the average number of cavities per person was 0.3, or three persons would have to be examined on an average to find one defective deciduous or permanent

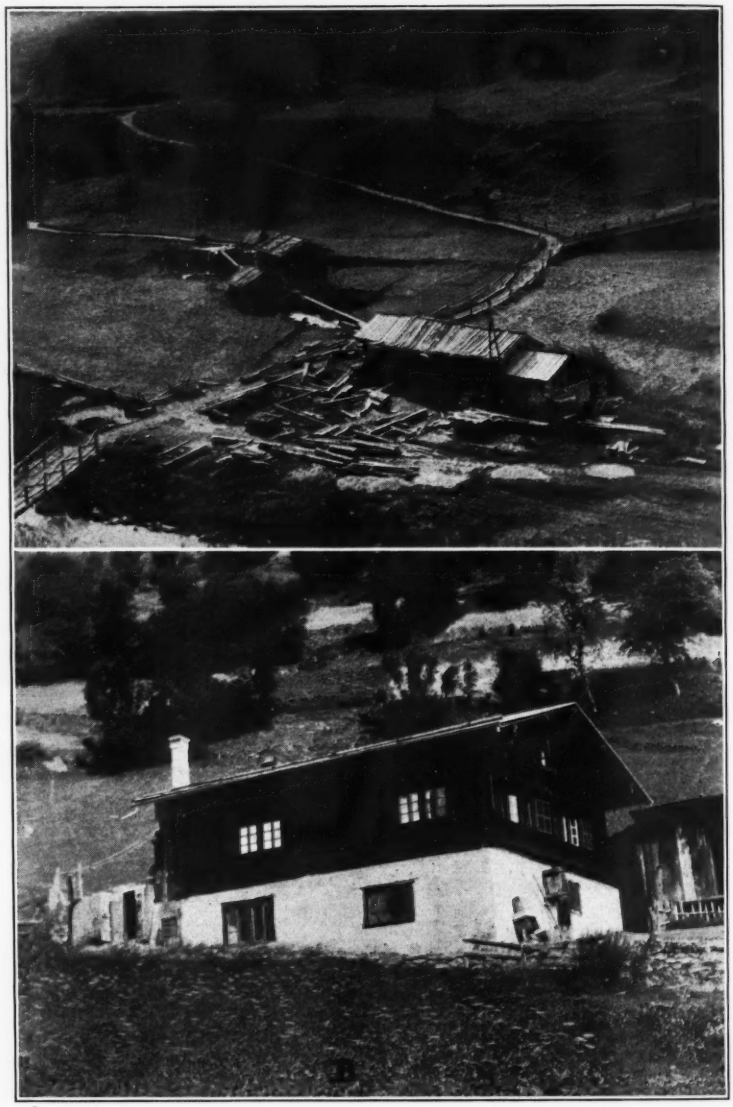

Fig. 5—Important factors in primitive immunity and modern susceptibility to dental caries. A, The water-driven municipal plants of Kippel, Loetschental, including, from left to right, the laundry, the grist mill producing entire grain flour and meal, the saw mill and the electric light plant. B, The new bakery, providing white breads and cakes to the valley, located at Kippel.

Fig. 1—Peaceful Kippel, the principal village of the beautiful valley of Loetschental, looking eastward.

Fig. 2—The dairy cows and goats provide the fat-soluble vitamins in the Alps. They seek the rapidly growing young grass near the melting snows. This grass is richer in both minerals and vitamins.

Fig. 3—Typical child life of the Loetschental valley.

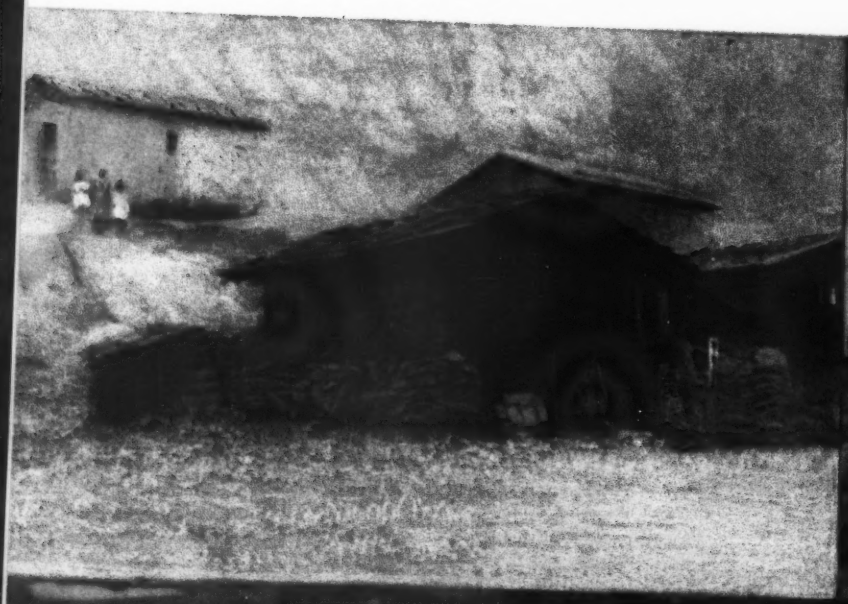

Fig. 4—A typical home in Fafleralp, Loetschental valley, near the glacier. Only natural foods are used, and these are chiefly dairy products and rye. The people of the valley have high immunity to dental caries.

tooth. The children examined were between 7 and 16 years of age.

The evening light of the valley varies according to the position and altitude, from rapidly darkening shadows in the deeper glades between the mountains, comparable to early evening darkness of the winter season on the plains, to the long brilliant twilight of summer of northern latitudes on the higher sides of the valley. Long after the lights in the cottages in the lower valley have been lighted the sun may be seen shining on the great snow-capped domes of the surrounding mountains, gilding the fringes of the snowy ramparts and bathing the parapets, which are buttressed by these ramparts, until they gleam like massive searchlights throwing their reflected shafts of dazzling light into nooks and corners of the forest glades of the mountain side. Then, as the sun passes below the distant horizon and lights the west with a crimson brilliance, these watchtowers change in color reflecting the glory of various cloud banks which are flinging back the rainbow hues of the sunset. This is the majesty of the Alpengluh. Far into the night these beacons signal to the dwellers of the valley their message of peace that all is well, that they are on guard, and promise them, "Tomorrow you too will be guardsmen."

If one is fortunate enough to be in the valley in early August and witness the earnestness with which the people celebrate their national holiday he will be privileged to see a sight long to be remembered. These celebrations close with the gathering together of the mountaineers on various crags and prominences where great bonfires are lighted from fuel that has been accumulated into an enormous mound to make a huge torchlight. These bonfires are lighted at a given hour from end to end of the valley throughout its expanse. Every mountaineer on a distant crag seeing the lights knows that the others are signaling to him that they, too, are making their sacred consecration in song which is *one for all and all for one*. This motive has been crystallized into action and has become a part of the very souls of the people. One understands now why doors do not need to be bolted in the Loetschental valley. How different the level of life and horizon of such souls from those in many places in the so-called civilized world in which people have degraded until life has no interest in values that cannot be expressed in gold or pelf, which they would obtain even though the life of the person being cheated or robbed would thereby be crippled or blotted out. One immediately wonders if there is not something in the life-giving vitamins and minerals of the food that builds not only great physical structures within which their souls reside but builds minds and hearts capable of a higher type of manhood in which the material values of life are made secondary to individual character.

Our quest has been for information relative to the health of the body, the perfection of the teeth, and the normality of development of faces and dental arches in order that we might through an analysis of the foods learn the secret of such splendid body building and learn from the people of the valley how the nutrition of all groups of people may be reinforced so that they too may be free from mankind's most universal disease, tooth decay and its sequelae. These studies included not only a physical examination of the teeth, the photographing of subjects, the recording of voluminous data, obtaining samples of food for chemical analysis with detailed information regarding daily menus but also the collecting of samples of saliva for chemical analysis to test out my newly developed procedure for estimating the levels of immunity to dental caries of a person at a given time as outlined in recent research reports.[3] In addition bacterial cultures were made from the mouths. The saliva samples were preserved by an addition of formalin equivalent to 1 per cent.

These children will be reexamined in succeeding years for making comparative studies to observe particularly the effect of the changes in the local nutritional programs. Some of these changes are already in progress as illustrated in Fig. 5, in which will be seen a modern bakery dispensing white bread and many white flour products, which I found in full operation when I returned for further studies in 1932.

In Fig. 2 is shown a typical scene of the dairy herds pasturing in contentment on the luscious grass near the glaciers. They typify a familiar inscription found in a chalet at Weitzalp which reveals the recognition of the life-giving qualities of the highest verdure which during its limited period of growth has greatest acceleration. Translated, it reads as follows:

Whence comes the longing for the Alp? Who is able to tell it?
Why are the swallows drawing to the fresh north in the spring?
Why are the woodpeckers ascending with the greening boughs of
Larch trees to the limit of the forest?
Why even the domestic animals are seeking in summer the highest pastures near the glaciers?

In the center of the picture between the cows and the glacier is seen a group of homes of mountaineers. A closeup of one of these homes is shown in Fig. 4 in which will also be seen two of the children residing therein. They, like the others of the Falferalp

Fig. 6—Mothers and children work in the fields.

[3]Price, W. A.: The Experimental Basis for a New Theory of Dental Caries, with Chemical Procedures for Determining Immunity and Susceptibility (124),* *Dental Cosmos* **74**:1139 (December) 1932. New Light on the Cause and Control of Tooth Decay in Man, from Field Studies of Primitive Districts Providing Immunity (132)*. Read before the American Association for the Advancement of Science, December 30, 1932, to be published.

community, have a high immunity to dental caries and fine physical development. They clearly are the product of their food which is almost entirely whole rye bread and dairy products.

A view of the valley looking east from our boarding house window at Kippel is shown in Fig. 1. The glacier is seen in the distance and the valley dotted with villages.

The hardihood of the peasants of all ages is well illustrated in Fig. 6 which shows a picture of an elderly mother with two children as they return home after their harvesting in the fields.

This brief account of the people of this district, the Loetschental valley in the Bernes Oberland, Switzerland, is one of several studies. The next installment will be a study of isolated groups in the canton of Wallis (Valais) south of the Rhone valley toward the Italian frontier. I will later undertake to interpret the nutritional programs and foods both for communities providing high levels of immunity and for those communities where immunity has been lost, often situated near one another.

(*End of First Installment*)

COMING:

II. Field Studies in Primitive Valais Districts, Switzerland
III. Field Studies in Modernized St. Moritz and Herisau, Switzerland
IV. Field Studies in Primitive and in Modern Outer Hebrides, Scotland
V. Practical Procedures for the Nutritional Control of Dental Caries

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DENTAL ASSISTANTS AND SECRETARIES

ELSIE GREY

CARE OF BURS

Burs to be serviceable must be sharp. Burs should not be boiled because boiling dulls their cutting surfaces. If the dentist uses his burs more than once (some do not) a small, stiff-bristle brush with warm soapy water should be used to remove the débris. The burs should then be rinsed and placed in a strong sterilizing solution for ten minutes, rinsed in alcohol, and wiped dry before being put away. All burs should be discarded which show the faintest trace of dullness under a magnifying glass. Dull burs are trying on the patient's nerves as well as on the operator's.

ACKNOWLEDGMENTS

QUESTION—Will you please print some suggestions for "thank you" letters to patients who refer other patients to the office?

—M. B., Kansas

ANSWER—Only the body and the closing phrase of each letter is given here:

FORMAL—Please accept our sincere thanks for your kindness in referring Mrs. Samuel J. Black of 316 Rose Terrace of this city to us for dental treatment. We deeply appreciate your confidence and will endeavor to serve Mrs. Black to the very best of our ability.

With kind personal regards, we beg to remain,

Very sincerely yours,

LESS FORMAL—It was very kind of you to refer to me for dental care your charming sister Mrs. White. She is a fine patient and we are doing our best to please her and you.

I deeply appreciate your confidence and friendship and value greatly the opportunity of serving another member of your family. I trust this finds you and your family in the best of health.

With sincere thanks for your kindness and best personal regards, I am,

Cordially yours,

LETTER BY A SECRETARY—Please accept the sincere appreciation of Doctor Smith for your kindness in referring Miss Emily Blank to him for dental treatment. Doctor Smith thanks you for this courtesy and begs to say that he will endeavor to serve Miss Blank to the best of his ability.

Respectfully yours,

Secretary to W. E. Smith

LETTER TO A REFERRING DENTIST—Mr. Charles Grey has duly reported to me at your recommendation, for adjustment of his dentures (example). I deeply appreciate your confidence and professional cooperation, and assure you that I shall do my best to serve Mr. Grey with satisfaction to you and to him.

I will be glad to keep you informed as to the progress of the case or any development that occurs.

With kindest regards and sincere thanks, I am,

Cordially yours,

QUESTION—Do you think the dental assistant should quote fees to patients or give them estimates on the required work? This question came up in our study club and we want to know what you think about it.

—D. A., Pennsylvania

ANSWER—There are certain types of dental offices that employ what is termed a "contractor," sometimes a dentist, sometimes a woman who combines this job with other office duties. Whether the dental assistant should quote fees to patients depends entirely upon the desire of the employer. Generally speaking, it is not the prerogative of a dental assistant to establish the amount that shall be paid for any given service. The fee is determined by the needs of the patient and only the dentist can judge these needs. On the other hand, if the dentist has determined what the patient requires and told the patient what the approximate amount of the fee for that service will be, then if the patient should ask the assistant what this amount is, we can see no reason for her not to inform the patient.

We definitely believe that no fees should ever be quoted over the telephone by the assistant, or by the dentist for that matter, and this also applies to queries about fees asked in personal conversation outside of the office.

QUESTION—Is the dental assistant permitted to instruct patients in the correct way to brush the teeth?

—A. B. C.

ANSWER—In many dental offices, *under the direct supervision of the dentist* the assistant instructs the patients how to brush the teeth according to the method advocated by that particular dentist. Every dentist has his own ideas about toothbrushing and no other method should be advocated by the assistant.

N. B. This is the last appearance of this department in THE DENTAL DIGEST. Inasmuch as the hygienists and assistants both have their magazines, we feel it perfectly proper, as this need is amply cared for, to step out of the scene and substitute a new department, *The Dental Scene.*

A PARTIAL CROWN

ROLLAND R. JONES, D.D.S.
Minneapolis

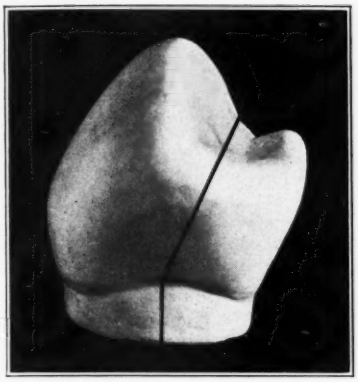


Fig. 1—Proximal view of bicuspid showing the angle formed by the long axis of the coronal portion of the tooth with the long axis of the root portion.

MOST of us would find satisfaction in converting handicaps into assets. The anatomy of the lower bicuspids has usually been considered a handicap to good bridge abutments, but it can be made an asset. It is characteristic of these teeth that the long axis of the crown forms an angle with the long axis of the root, and that the buccal cusp is sturdy while the lingual cusp is small and does not lend itself well to a three-quarter crown (Fig. 1).

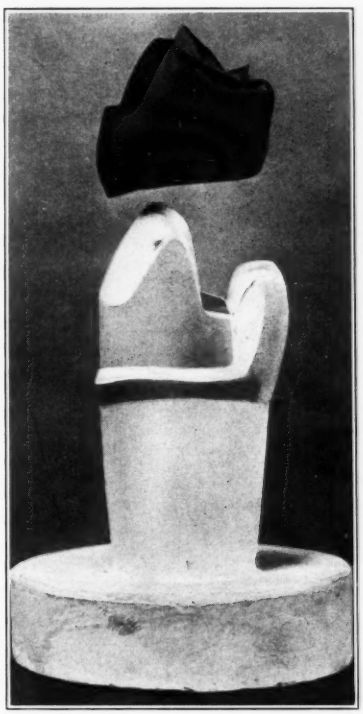
If a three-quarter crown is reinforced by extending it over the buccal cusp, the gold is exposed where it is most conspicuous (Fig. 2), and the gingivo-buccal surface, often an area susceptible to decay, is unprotected.

If the strong buccal cusp is grasped with a restoration and without covering the entire cusp, a strong inconspicuous abutment may be made which withdraws along the long axis of the root (Fig. 3). If use is made of the opposing frictional surfaces thus gained, the maximum grip on the tooth will be had with the minimum loss of tooth substance.

No advantage is gained by covering the lingual surface unless an encircling clasp is to be used, but for such a clasp the lingual surface is encircled and the restoration is recessed to receive the clasp (Fig. 4). This makes a positive anchorage for a denture, which should be used only with a stress breaker. A lower cuspid, similarly prepared but with a cingulum built up in the restoration and recessed for a clasp, becomes a good anchorage instead of a poor one (Fig. 5). A lower molar may sometimes be prepared for a similar partial crown, and it makes a good bridge abutment (Fig. 6).

The relative amount of opposed frictional surface and the amount of tooth cut away for a partial crown as compared with a full crown are shown in Fig. 7. Attention is called to the fact that enamel may be made to take the wear of occlusion instead of the

Fig. 2—A three-quarter crown for a lower bicuspid.



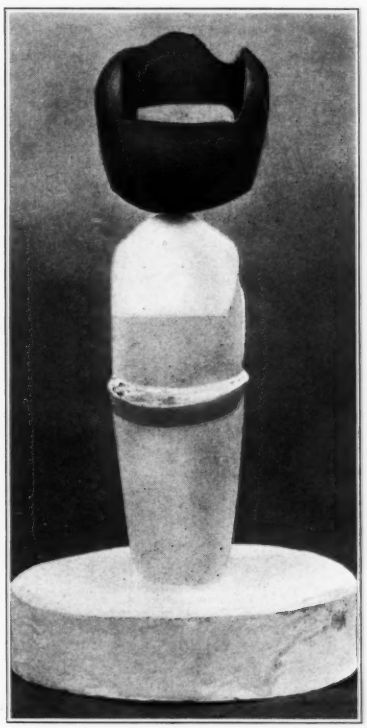


Fig. 3—Proximal and buccal views of partial crown preparation.

Fig. 4 A—Buccal view of steps in partial crown prepared on a lower bicuspid to receive a clasp. (Read from right to left.)

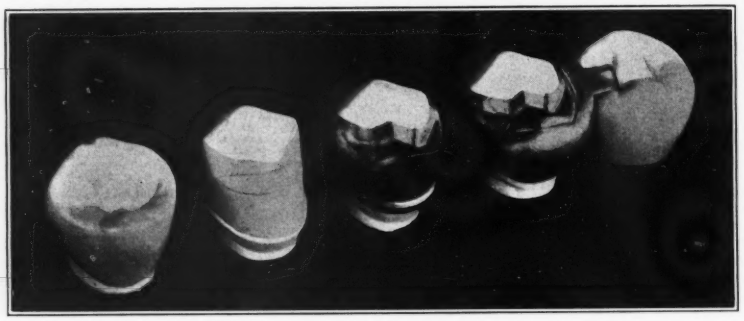


Fig. 4 B—Lingual view of Fig. 4 A. (Read from left to right.)

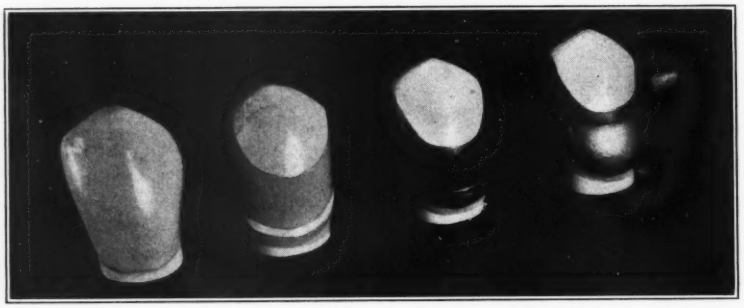


Fig. 5 A—Labial view of preparation on lower cuspid. (Read from left to right.)

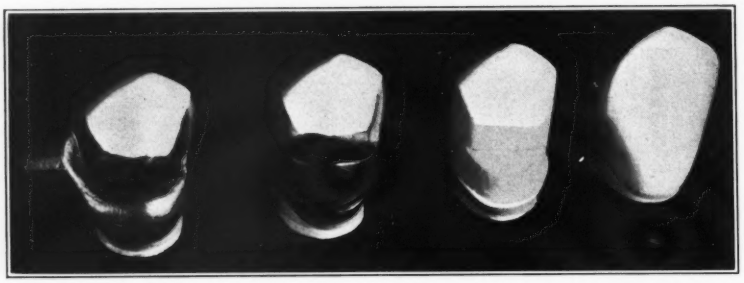


Fig. 5 B—Lingual view of preparation on lower cuspid. (Read from right to left.)

Fig. 6 A

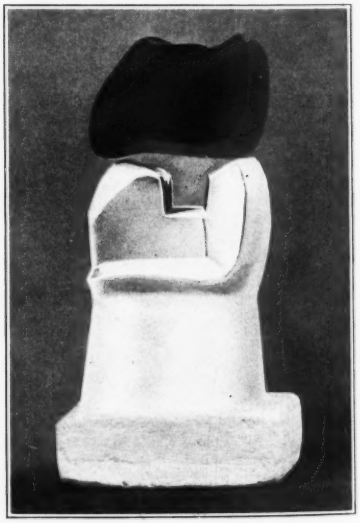


Fig. 6 B—Buccal and proximal views of molar preparation.

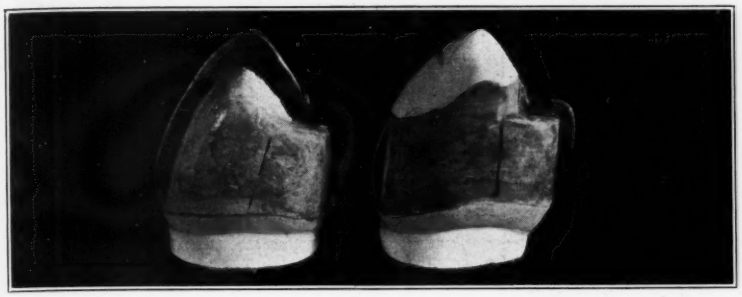


Fig. 7—Comparison of differences in amount of tooth cut away and amount of gold between full and partial crown.

Fig. 8—Copper band filled with inlay wax and 28 gauge gold staple in position.

Fig. 9—Finished casting in position showing gold staple and buccal spur of gold before their removal.

gold (Fig. 6). It is no doubt self-evident that a hard, tough gold should be used for all these restorations.

Two small factors make this restoration relatively simple and practical: one is the 28 gauge gold staple, which serves as a handle. It is inserted in the wax model on the tooth and remains in the casting until it is well fitted. The other factor is the spur of gold on the buccal surface which is left there until the restoration is permanently set (Fig. 8). The spur of gold is used as a rest for the instrument while tapping the partial crown to place; without it, complete seating along the buccal would be impossible.

Technique

The making of the wax model for the preparation, as illustrated in Fig. 3, depends especially on four factors: (1) a preparation that "draws," (2) an oiled copper band carefully fitted and festooned, (3) the insertion of the staple for wax removal, and (4) the addition of a drop of wax on the buccal surface for the spur.

When the tooth has been prepared and a copper band fitted, festooned, and oiled, the band filled with wax is carried nearly to place over the tooth; then it is removed, inspected, and discrepancies are corrected. The band with wax is reheated in warm water and completely carried to place (Fig. 9). The wax is allowed to set; the surplus removed; the staple inserted, and the band freed by a gingival push and removed. The wax is carefully trimmed with a sharp razor blade knife; a small sprue wire is inserted in the greatest bulk and at the best angle for flowage. A drop of wax is added on the buccal surface, and the casting is completed. The cleaned, relieved, oxidized casting is tried in and fitted. When it goes entirely to place easily, the staple is cut off and the occlusion corrected; but the spur formed by the drop of wax remains until the restoration is permanently set, and is then dressed off.

When a clasp is to be recessed in a partial crown, the recess is roughed in on the wax model in the mouth (with an eye to paralleling other abutments) and finished in the casting.

It may seem simpler to use the indirect method for these delicate restorations, but this has not proved to be the case. The casting of a circle of gold without a top is much easier than the large restorations of crowns. The first reaction to this partial crown usually is that there are too many margins; but the only additional ones are those easy to make satisfactorily, and they are in practically immune areas.

Comparative Analysis of Some of the Aspects of the Final Report of the Committee on the Costs of Medical Care with Tabular Presentations and Comment*

By HERBERT E. PHILLIPS and C. E. RUDOLPH

Introductory Remarks: The tabular presentation shown below is for the purpose of comparing points of view on some of the important problems of medical organization as expressed in the recent Final Report of the Committee on the Costs of Medical Care, the Final Report of the Commission on Medical Education, and in an editorial in the *Journal of the American Medical Association*, published December 3, 1932.

In the seventh column in each instance are presented the authors' comments on the points of difference or agreement among the problems referred to.

In the columns reading from left to right the following captions are given to the various columns to indicate the articles or publications from which the quotations have been taken; Majority: Majority Report of the Committee on the Costs of Medical Care; Minority: Minority Report No. 1 of the Committee on the Costs of Medical Care; Dentists: Minority Report No. 2 of the Committee on the Costs of Medical Care; Commission: Final Report of the Commission on Medical Education; Editorial: Editorials of the *Journal of the American Medical Association*.

The tabular comparisons will not touch all the important points which were raised; they will, however, provide a basis for a comparison on the following topics: The principle of insurance in medical care; participation by commercial carriers in health insurance; voluntary health insurance; compulsory health insurance; group practice; community medical center; taxation for the medical care of indigents; the personal relation; the role of the general practitioner; professional standards and leadership and abuses and evils.

[The Committee has made its recommendations. On these recommendations for immediate action our analysis indicates there is no wide divergence on fundamental principles. Divergence is on detail. This basic agreement makes possible the carrying out of the mutually accepted recommendations. What is most desirable locally must be worked out by professional societies through their own experimentation. United effort within our organizations will make our professions more effective in preserving our mutually accepted professional values.]

	QUOTATIONS FROM MAJORITY REPORT SIGNED BY SEVENTEEN PHYSICIANS	QUOTATIONS FROM MINORITY REPORT No. 1 SIGNED BY EIGHT PHYSICIANS	QUOTATIONS FROM MINORITY REPORT No. 2 SIGNED BY TWO DENTISTS	QUOTATIONS FROM COMMISSION ON MEDICAL EDUCATION	QUOTATIONS FROM EDITORIAL IN JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, DEC. 3	AUTHORS' COMMENTS Note: In this column Minority Report No. 1 will be referred to as the Minority report and Minority Report No. 2 as the Dentists' report.
THE "INSURANCE PRINCIPLE" IN MEDICAL CARE	"The Committee recommends that the costs of medical care can be placed on a group payment basis, through the use of insurance, through the use of taxation, or through the use of both of these methods. This is not meant to preclude the continuation of medical service provided on an individual fee basis for those who prefer the present method. Cash benefits, i.e., compensation for wage-loss due to illness, if and when provided, should be separate and distinct from medical services." p. 20.	"This minority group agrees that any plan for the distribution of medical costs must have the following safeguards: 1. It must be under the control of the medical profession. 2. It must guarantee not only nominal but actual free choice of physicians. 3. It must include all, or a large majority, of the members of the county medical society. 4. The funds must be administered on a non-profit basis. 5. It should provide for direct payment by the patient of a certain minimum amount, the common fund providing only that portion beyond the patient's means. 6. It should make adequate provision for community care of the indigent. 7. It should be entirely separate from any plan providing for cash benefits. 8. It must not require certification of disability by the physician treating the disease or injury." p. 179. "This group recognizes the value of trial of plans based upon the above principles by county medical societies." p. 180. "We offer medical care . . . with the adoption of insurance methods only when they can be kept under the professional	"We strongly endorse the initiative of such professional bodies as the Milwaukee Medical Society or the State Medical Society of California in endeavoring to meet their obligations to the public by developing plans of group payment." p. 187. "We believe also that payment for medical service by distributing the costs over groups rather than having it fall upon individuals is a sound principle when applied in such ways as maintain professional standards of service." p. 184. "The problem of providing medical care is a question of low incomes and the solution depends at least as much upon increasing incomes to a satisfactory standard of living as upon methods of organizing medical care." p. 186.	"The burden of illness falls unevenly on the population and is unpredictable for the individual. It can only be met satisfactorily through collective provision for medical care. The distribution of this burden over a group of the population can be provided through insurance or taxation." p. 66. "It is highly important that the medical and allied professions be informed of the merits and advantages as well as the defects of insurance plans, which contain certain elements which ought to contribute to better medical services. Sound plans of social legislation in this field cannot be developed more rapidly than sound professional and public opinion. There must be an evolution from the present forms of medical care. It is doubtful whether any plan artificially superimposed on our present scheme would meet with success. *It seems clear, however, that the economic, political and social factors which forced the development of sickness insurance in most countries of the world are also operating in this country.*" p. 45.	"The recommendations of the Committee will not come as a surprise . . . Harry Moore published a book . . . which revealed his personal bias for insurance schemes . . . It is interesting to find the pet schemes of many of its members so sweetly elaborated in the Majority Report." p. 1950.	It will be noted there is general agreement among all groups on the Committee as well as the Commission on Medical Education in regard to the use of the insurance principle for medical care. Note especially the basic principles under which health insurance would have the approbation of the Minority. These principles would most likely meet the requirements of "sound professional opinion" referred to by the Commission. The editorial implies that Mr. Moore's interest in health insurance was the force that influenced the Committee on the Costs of Medical Care to make recommendations for group payment. On the other hand it will be noted that the members of the commission were influenced by the force of social and economic trends to similar conclusions.

	the forms of insurance against the costs of medical care which are recommended in this report, would, the Committee believes, tend to increase the costs and not to improve the quality of service . . . Furthermore, the arrangements will be more satisfactory to all parties, if, in financial matters, the practitioners can deal directly with patients or their representatives, than if they must deal only through an intermediate business agency. Administration by private insurance companies would largely, if not entirely, forfeit the most important element in the establishment and maintenance of quality, namely: effective professional participation in the formulation of policies." p. 50. "Many insurance companies offer accident and health policies which provide limited cash benefits to meet the costs of medical care . . . These policies even when sold on a group basis are too expensive to be of widespread value." pp. 95-6.	with the adoption of insurance methods only when they can be kept under the professional a non-profit organization . . . The minority agrees that this principle should always govern in any plan of contract practice that may be necessary to meet the needs in a particular situation." p. 166. "It (insurance) must be under the control of the medical profession . . . The funds must be on a non-profit basis . . . It must not require certification of disability by the treating physician." p. 179. The minority recommends that the corporate practice of medicine financed by intermediate agencies be vigorously opposed as being economically wasteful inimical to a continued and sustained quality of medical care or unfair exploitation of the medical profession." p. 176. "We tried to make it plain that we are not opposed to insurance but only to the abuses and evils that have practically always accompanied insurance medicine." p. 179. "It should be remembered that the medical profession does not object to contract practice *per se* but only to the unethical practices which may attend that method of rendering medical services." p. 156. "Study of many insurance systems seems to justify the conclusion that evils of insurance decrease in proportion to the degree that responsibilities with accompanying powers and duties are intrusted to the medical profession." Simons and Sinai. *The Way of Health Insurance*, p. 167.	society plans of sickness insurance . . . These would place responsibility on the professions for the maintenance of standards of service." p. 186.	quality of medical service is directly related to the degree of responsibility placed upon the medical profession in the administration of sickness insurance." p. 46. "The original object of sickness insurance was to provide cash benefits to persons incapable of working. Gradually this idea was replaced by importance of medical treatment. The change illustrated . . . by . . . shift from cash benefits to benefits in kind which have become the basis of sickness insurance today. Benefits in kind include medical treatment . . . hospital . . . dental . . ." p. 43.	need not be taken to mean that the minority report is opposed to any individual carrying insurance against the occurrence of a major illness or operation so that he might receive at such time funds sufficient to pay the hospital and the physician he might select. No doubt insurance companies could sell such policies most reasonably if a sufficient number of persons could be induced to insure themselves and their families in this manner. Such a procedure is foresighted, American, economical." p. 1951.	Medical Care joined in declaring that there is no need for and considerable danger in the participation by commercial insurance carriers in the financing of medical services. The Commission on Medical Education points out the trend of "cash benefit" insurance schemes to "benefits in kind." The Majority points out the high cost of commercial cash benefit insurance. Simons and Sinai quoted by the minority agree with the Commission on the necessity for professional responsibility. The editorial of the Journal of the American Medical Association stands alone in approval of cash benefit commercial insurance for payment of medical care. Professions can have no part in administering commercial cash benefit insurance under the principles formulated by the minority.
PARTICIPATION BY COMMERCIAL CARRIERS IN HEALTH INSURANCE						
VOLUNTARY HEALTH INSURANCE	"The majority of the Committee, although aware of the limitations of coverage, and the possible difficulties of voluntary health insurance, nevertheless believe that the ultimate results will be far better if experience with actuarial and administrative details, and above all the evolution of group practice units capable of rendering rounded medical service of high quality, precede the adoption of any compulsory plan by a state as a whole." p. 127.	"Nothing has been made clearer than the fact that voluntary health insurance schemes have everywhere failed. In Europe they have been replaced by compulsory systems which are now under trial." p. 136. "Voluntary insurance systems are now in operation in many parts of the United States and are increasing in number and in size." "Medical societies in various parts of the United States have been giving careful study to the question of the possibility of distributing the costs of medical care and at the same time avoiding the evils of insurance systems." p. 179.	"We do not consider that voluntary and compulsory sickness insurance should be regarded as in opposition to each other or as unrelated proposals as seems to be implied in the Majority Report." p. 185. "European experience indicates that methods developed under voluntary insurance have indicated the pattern for compulsory insurance later." p. 185.	"Many of the agencies set up to deal with these problems have been voluntary groupings along religious, political, trade, or social lines. Competition between them on the basis of lower rates as well as larger and more benefits, and between physicians for contracts with the societies led to many abuses and unsatisfactory medical service." p. 42.		The majority report emphasizes the values to be gained through group payment placed on a voluntary non-profit basis. Most voluntary and contract schemes now in existence are severely criticized by the Minority. Medical Society Insurance Plans, they point out, would avoid these evils. The Dentists' report and the Commission's report agree that voluntary insurance schemes are only a stage in the development of compulsory systems.
COMPULSORY HEALTH INSURANCE	"Some members of the Committee believe that the industrial states at least should immediately begin to plan for the adoption of legislation which will require all persons in certain income groups, certain occupations, or certain areas to subscribe for health insurance." p. 121.	"It seems clear then that if we must adopt in this country either of the methods tried in Europe the sensible and logical plan would be to adopt the method to which European countries have come to through experience, that is, a compulsory plan under governmental control." p. 164.	"European experience indicates that methods developed under voluntary insurance have indicated the pattern for compulsory insurance later. In certain sections of the United States voluntary insurance has . . . developed . . . certain evils . . . It is probable that the introduction of compulsory insurance under professional control will eliminate the objectionable features." p. 186.	"Voluntary schemes have proved to be only a stage in the development of compulsory coverage." p. 43. "The current trends of sickness insurance are towards compulsory, territorial, or geographic groupings instead of voluntary societies." p. 43.	"The dental members favor . . . some form of compulsory insurance under professional control." p. 1951.	Nine members of the Committee, including four physicians and five laymen, expressed themselves definitely in favor of the immediate introduction of compulsory health insurance in some parts of the United States. Other groups were of the definite opinion that voluntary insurance was merely a step toward the gradual development of compulsory plans. The Dentists' report points out the necessity for professional direction of voluntary insurance in order to control the development of compulsory systems.

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GROUP PRACTICE	"The Committee recommends that medical service, both preventive and therapeutic, should be furnished largely by organized groups of physicians, dentists, nurses, pharmacists, and other associated personnel. Such groups should be organized, preferably around a hospital, for rendering complete home, office, and hospital care. The form of organization should encourage the maintenance of high standards and the development or preservation of a personal relation between patient and physician." p. 109. "By an 'organized group' the Committee understands a group which is so organized that each professional person in it is responsible to the group for the quality of his work rather than solely to himself." p. 109.	"The minority recognizes the advantages of group practice under certain conditions, especially in communities where practically all of the physicians can be joined in one, or at the most, two groups . . . We approve the development of pay clinics when they are under the management and control of physicians and are conducted on a high ethical plane and are needed to meet a situation . . . We believe the establishment of such clinics (private group clinics) is in line of progress when they are a natural outgrowth of local conditions." pp. 160-2. "We offer medical care furnished . . . with groups and clinics organized only where the nature of the situation and character of the personnel under each organization is a natural development." p. 183.	"We are in accord, therefore, with the general recommendations of the majority in favor of group practice and group payment, although we must register dissent from certain specific proposals and certain implications of the majority report which we do not consider justified." p. 184. "We recognize that certain evils that have developed in group practice and in sickness insurance in the past have been chiefly due to lack of professional initiative and control and that with the assumption of initiative and control by the professions at this time these evils will be minimized in the future." p. 85.	"Group practice has been developed in certain sections of the country. It has grown up because of the inability of a single physician to master all fields of practice." p. 51. "When properly conducted, it can provide at less cost and greater convenience to the patient a quality of medical service superior to that provided by individual practitioners." p. 51. "Group practice is in the direction of adapting medical services to current conditions within the profession and the needs of certain patients, as well as to the changing social and economic organization. If conducted properly it offers distinct advantages and satisfaction to the physician, the patient, and the public." p. 52.	"Briefly, the majority report recommends that medical practice be rendered largely by organized groups associated with hospitals . . . The rendering of all medical care by groups or guilds or medical soviets has been one of the pet schemes of E. A. Filene . . . it is interesting to find the pet plans of many of its members so sweetly elaborated in the majority report." p. 1950.	The majority report declares definitely in favor of group medical service as the desirable objective in medical care. The possibilities for professional and economic gain through group practice are recognized by the dentists and the Commission. Minority members of the Committee are less sanguine concerning the prospects in the field of group practice. The editorial describes them as pet schemes of individual Committee members. It is doubtful if Mr. Filene was in a position to influence the Commission to approve of group practice. The editorial implies he was influential in this direction as a member of the Committee on the Costs of Medical Care.
THE COMMUNITY "MEDICAL CENTER"	"The keystone of the concept of a satisfactory service for the nation is the development of one or more nonprofit 'community medical centers' in nearly every city of approximately 15,000 population or more." p. 59. "This center would include a well-equipped general hospital, an out-patient department, and a pharmacy. It would provide offices for physicians, dentists, technicians, and subsidiary personnel, and headquarters for nurses," p. 59. "The systems outlined above may constitute the goal . . . Some features are impractical at the moment . . . The plans are . . . within the range of practicability within the next two or three decades." p. 71.	"The emphasis placed upon this plan which is called 'the Committee's most fundamental specific proposal' we believe to be far beyond any possibility of its ultimate value. It is admittedly an idealistic plan based almost solely upon theory." p. 154. "The plan is suggestive of the great mergers in industry, the main medical center being in the nature of the parent holding company governing the activities of subsidiaries and branches." p. 154. "We look upon this plan as far-fetched and visionary. It has no practical relationship to the question the Committee has set itself to solve." p. 155.	"The description of the community medical center, which is set forth in the third chapter of the Majority Report as the ultimate goal of development, is Utopian in concept, and involves many details which are too visionary or problematical to justify inclusion in an authoritative report of this kind." p. 185.		"The physicians of this country must not be misled by Utopian fantasies of a form of medical practice which would equalize all physicians by placing them in groups under one administration." p. 1952.	The most comprehensive specific proposal of the Majority Report was the Community Medical Center. The dentists criticized the center as too Utopian for consideration. The Minority likened it to a factory system with central control. The Majority agree it is impractical at present and say it will be within range in twenty or thirty years.
PROFESSIONAL STANDARDS AND LEADERSHIP	"The cooperation of the professional groups in community or state leadership is essential. Their stake in these issues is very large; their interest is continuing. They should investigate as well as guide. The crucial point in the generalship of the forces at work is, perhaps, the development of a proper relation between the professional and the lay groups." p. 149. "Safeguards could be erected if state or national medical and dental societies formulated standards for the organization of group practice and set minimum fees for group practice arrangements of various types. Each medical group which offered voluntary health insurance would then be inspected and graded, as hospitals and medical schools are graded	"Our recommendations are based upon the conviction that the medical profession is the essential element in the furnishing of medical care. Its influence should be upheld and strengthened and every assistance given to it to maintain its high professional standards." p. 170. "It is the opinion of this group that it is much better to lodge power in the hands of the professions which are trained to furnish medical care than in the hands of lay corporations." p. 181.	"In our opinion, the most important influence for the maintenance of professional standards is vigorous initiative on the part of the professions themselves." p. 184. "It is destructive to standards of medical care in which both the public and the professions have a common interest if competition exists in such form as to bring about price-cutting and underbidding for service." p. 187.	"Medicine will occupy its proper place in society to the extent that it provides leadership and properly trained personnel for the program of medical service, which should be built upon thoughtfully conceived plans of medical and postgraduate education, proper organization of the profession, and the advocacy of unselfish and courageous public and professional policies." p. 400. "It is obvious that methods must be devised and previous ideas of medical care adjusted, if necessary, to meet present conditions in order to mobilize the enormous body of current scientific knowledge for the benefit of the community and the individual. The medical, hospital, dental, nursing, and other professional groups are aware of the necessity and are	"The alignment is clear—on the one side the forces representing the great foundations, public health officialdom, social theory—even socialism and communism—inciting to revolution; on the other side, the organized medical profession of this country urging an orderly evolution guided by controlled experimentation." "The American Medical Association, through its Board of Trustees, supports the minority report. No doubt the House of Delegates at its session in Milwaukee next June will urge every physician affiliated with the organization to do likewise." p. 1952.	All groups in the Committee on the Costs of Medical Care as well as the Commission on Medical Education argee that no organization of medical services should jeopardize professional standards. They also state clearly the importance of professional leadership in the maintenance and control of the quality of professional services. The editor sees two divergent types of leadership—revolutionists and evolutionists.
	the community must be provided either by private charity, including the charitable services rendered by practi-	ultimate object of relieving the medical profession of this bur-		for the indigent sick although their employment by hospitals or the community is likely to	the indigent by the government be expanded . . . To what extent such plans may	Commission that government care for indigent persons be extended and favored the use

TAXATION FOR THE MEDICAL CARE OF INDIGENTS	... provided either by private charity, including the charitable services rendered by practitioners, or by public funds. The Committee believes that this burden should fall largely upon the latter and recommends that more adequate provision be made for meeting it. The service should include medical, dental and nursing care, given in hospitals, clinics, or homes. Sound public policy demands that the practitioners as well as the agencies which provide such service be properly remunerated." p. 123.	... indigent be expanded with the ultimate object of relieving the medical profession of this burden." p. 172.		... for the indigent sick although their employment by hospitals or the community is likely to bring about a modification of the present independent status which they enjoy." p. 56.	... the indigent by the government be expanded . . . To what extent such plans may lead toward state medicine is, of course, problematic." p. 1951.	... Commission that government care for indigent persons be extended and favored the use of tax funds to remunerate medical practitioners and institutions for such services. The editorial suggests the problem of State medicine may be involved in the use of tax funds for this purpose.
THE "PERSONAL RELATION"	"This plan must safeguard the quality of medical service and preserve the essential personal relation between patient and physician." p. 38. "Medical care, by its very nature, is and must remain a distinctly personal service." p. 39. "The group should hold some particular physician responsible for the care rendered to each patient . . . Continuity of relationship, year after year, between the patient and the physician should be strongly encouraged." p. 47.	"By personal relationship is meant that bond of sympathy and interest in the patient's welfare on the part of the physician, confidence in the ability, integrity, and discretion of the physician on the part of the patient, and mutual regard on the part of each for the other which cause the patient to disclose for the purpose of diagnosis and treatment the most private and confidential information concerning himself and his surroundings when necessary for proper diagnosis and treatment." p. 169.	"We do not feel that method of payment need interfere with the highest professional standards nor with the close personal relationship between practitioner and patient." p. 186.	"The unit of practice, however, whatever the type or degree of organization is the individual patient."		The membership of the Committee and of the Commission agree unanimously on the importance of maintaining the personal relationship in any effective system of medical care. The Minority point out it is hard to maintain this relation in group practice.
THE ROLE OF THE GENERAL PRACTITIONER	"The well-qualified general practitioner can indeed care for a large proportion of illnesses, but to realize his ideal possibilities in many cases he needs association with specialists and access to the facilities furnished in a good hospital." p. 44.	"The great majority of illnesses and injuries (about 85 per cent) are of such nature that they can be treated efficiently by any able general practitioner with very simple equipment. In fact, the general practitioner does not need elaborate apparatus of any kind. His most important items of expense are his means of transportation and his rent. Neither of these can be greatly affected by combinations of general practitioners in groups." p. 174.		"Only a relatively small proportion of illnesses actually requires these advanced laboratory determinations, special consultations, or treatment by specialists." p. 30.	"Experience has shown that more than 80 per cent of all ailments for which people seek medical aid can be treated most cheaply and most satisfactorily by a family physician with what he can carry in a handbag." p. 1950.	There is general agreement among Committee members and the Commission as well as the editor of the *Journal of the American Medical Association* that the general practitioner should play an important part in any future organization for medical care. The majority would make a place for the general practitioner in group medical service whereas the minority feel that he should preferably function separately in private practice.
EVILS AND ABUSE	"Certain defects, however, have developed in some existing plans of voluntary health insurance. In those areas in the United States where an incomplete form of this plan has been tried extensively, some groups of practitioners have been willing to cut their fees and to impair their service in order to attract patients from other groups. Some clinics have employed practitioners at inadequate salaries and have loaded them with more work than they could possibly do well. Certain clinics have consumed an excessive share of the income of the group for personal purposes, leaving little or no reserve to meet emergencies or to provide for needed expansion of service." p. 125.	"One of the strongest objections to industrial medical services, mutual benefit associations, so-called health and hospital associations, and other forms of contract practice is that there has been found no means of preventing destructive competition between individuals or groups concerned with these movements. This injects a type of commercialism into medical practice which is harmful to the public and the medical professions, and results in inferior quality of medical services." p. 157. "Medical societies in various parts of the United States have been giving careful study to the question of the possibility of distributing the costs of medical care and at the same time avoiding the evils of insurance systems . . . We believe the county society under supervision of state and national societies is the proper unit . . . to attempt such experiments." p. 179-80.	"We recognize that certain evils that have developed in group practice and in sickness insurance in the past have been chiefly due to lack of professional initiative and control and that with the assumption of initiative and control by the professions at this time these evils will be minimized in the future." p. 185.	"There are disadvantages of group practice, however, growing out of the financial and personal arrangements of the group, the dispersion of responsibility for the care of the patient, the temptation to require more examinations and consultations than are necessary, and the limitations placed on exceptionally able individuals." p. 51. "The resistance of the profession to the growth of group practice comes partly from apprehension that it will disrupt present methods of competitive practice to the disadvantage of the individual practitioner." p. 52.		All groups are agreed there have been abuses and evils developed in insurance systems and group practice in the past. The dental report points out these evils and abuses are the result of lack of professional initiative and control. All groups agree with the position taken by the Dentists' Report that assumption of professional initiative at this time will minimize these evils and abuses. The minority points out that Medical society plans will avoid the evils of past insurance systems.

*Reprinted from the Bulletin of the Chicago Dental Society, January 26, 1933. (Permission granted.)

POSTERIOR SPACE RETAINERS FOR DECIDUOUS TEETH

CLAUDE W. BIERMAN, D.D.S.
Minneapolis

THE functioning time of the deciduous molars is from ten to twelve years or nearly 20 per cent of a patient's life. This functioning time has a significant value in the subsequent development of the deciduous arch.

It is important that the dental profession assist in every way possible to keep the deciduous molars free from infection and in repair in order that they may function for their allotted time. For various reasons these deciduous molars are often removed from the dental arch and in such cases a tooth replacement or a space retainer is usually required. When this is the case, roentgenograms must be used in the diagnosis.

The apical abscess is the greatest cause of tooth removal in children. This too common condition could be practically eliminated with proper care; but this will necessitate a more intensive study of the dental ills of children.

Our duties as dentists include a wider scope than mere tooth restoration and prosthesis. We must educate the parents and the laity in general to the importance of healthy functioning in the mouth and of maintaining the oral cavity in a healthy relationship to the whole body.

If a deciduous tooth is removed from the dental arch, a responsibility is placed on dentists to inform the parents as to the disastrous results that will occur unless the space is retained. This diagnosis and explanation can be accomplished efficiently only by the aid of roentgenograms and models. The power of sight is greater than that of the ear when the value of space retainers is being explained to the parents.

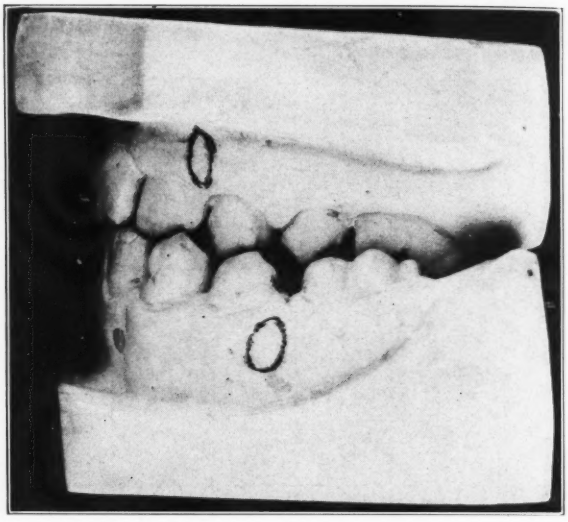

Fig. 1 A

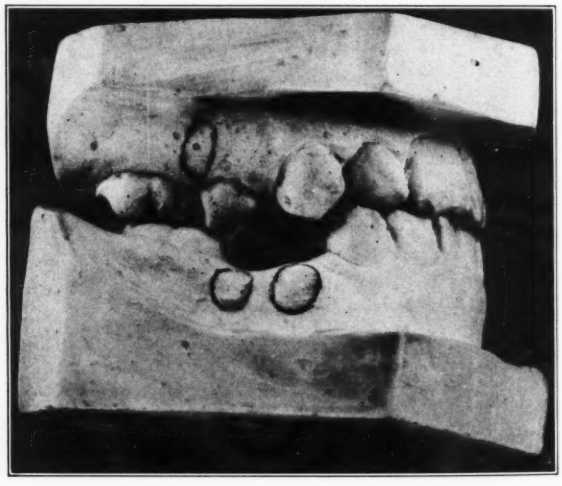

Fig. 1 B

Figs. 1 A and 1 B (Case 1)—A boy, aged 10, had five unerupted permanent teeth in the arch. This in itself is not unusual at his age, but there was room for only one to erupt on the lower right side; namely, the first bicuspids. That meant that there would still be four impacted and unerupted teeth. I explained to the mother that only a roentgenogram would show whether the teeth were in the arch (Figs. 1 A and 1 B).

Fig. 1 A shows the left side of the mouth. The upper cuspid is shown impacted and its space closed; also the upper left lateral bicuspids and molar are in lingual version to the lowers. The lower second bicuspid is impacted with a mesial drifting of the first permanent molar.

Fig. 1 B shows the right side of the arch. The upper right second bicuspid is impacted and the lower right bicuspids are unerupted. There will be room for the lower right first bicuspid to erupt but the lower right second bicuspid will remain impacted.

Four or five years before the boy had had several deciduous teeth extracted and the dentist had not mentioned retention of the spaces. By this neglect on the part of the dentist the parents are now being subjected to a great deal of expense and the child must wear orthodontic appliances for many months in order to develop the spaces for the reception of the permanent bicuspids.

Fig. 2 A (Case 2)—These models are of the mouth of a girl, aged 6½, and they demonstrate a condition similar to that shown in Figs. 1 A and 1 B. The first permanent molars are shown drifting and tipping mesially. The history disclosed that the upper deciduous second molar had had cavities which had been filled and refilled many times with cement until finally the pulp was involved. The teeth were removed but no effort was made to retain the spaces. The condition was bilateral.

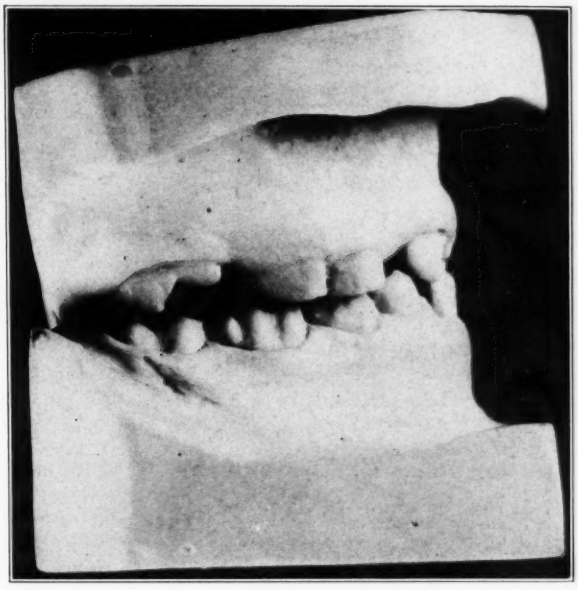

Fig. 2 A

Fig. 2 B (Case 2)—An occlusal view of the bilateral condition shown in Fig. 2 A. Here again, it was necessary to resort to orthodontic treatment to develop the space for the reception of the permanent second bicuspids. After the molars were moved to their normal relationship, retainers were placed to be worn until the time of the eruption of the second bicuspids. Roentgenograms clearly showed the impacted bicuspids.

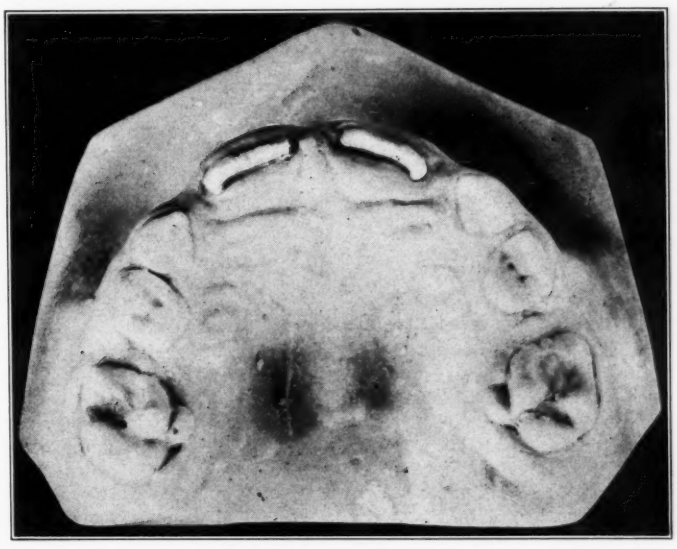

Fig. 2 B

Fig. 3 (Case 3)—Partial section of a lower arch, right side. Second bicuspid erupting buccally. A girl, aged 12 when this model was made, was first seen at the age of 7. At that time an abscessed second deciduous molar was present which I advised having removed, and, also, I advised the placing of a space retainer. The father consented to the extraction but told me he did not think it necessary to place a retainer because as a child he had had several abscessed teeth removed, and although retainers had not been placed, he had a fine mouth with no impactions. He was so definite about his decision that I did not try to persuade him to change his mind. Four years later he brought the child to my office with the result shown in Fig. 3. I had to advise the removal of the second bicuspid as he could not afford orthodontic treatment. This difficulty could have been avoided with little expense to the parent if he had taken advice concerning the future welfare of the child.

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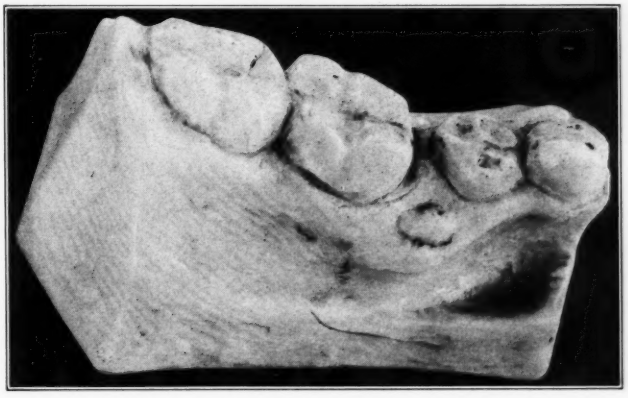

Fig. 3

THE PHYSIOLOGIC BASIS FOR TREATMENT OF SO-CALLED PYORRHEA

G. R. LUNDQUIST, D.D.S., F.A.C.D.
Chicago

IN a discussion of the treatment of so-called pyorrhea three principal factors should be given consideration: (1) the chronicity of the condition, (2) the shifting line of attachment, and (3) the drift of teeth.

The chronic character of the diseased process implies an acute rise and a corresponding fall; namely, inflamed and bleeding gingivae, and a normal recovery therefrom without treatment. The natural tendency is toward recovery. The body tends simply to heal itself. If some form of drug therapy or mechanical means of checking the process is interposed, the success depends largely on which side of the picture the treatment is instituted. If the condition is on the recovery side of the picture, any form of treatment is capable of performing the miracle of recovery. If the inflammatory process is on the rise instead of the decline side of the picture, no matter what form of treatment is tried the condition is only aggravated.

In like manner, when treating any chronic process, the surgeon carefully avoids operating on the rise side of the condition so as not to produce further aggravation of the process. The surgeon may have no choice, however. Often such a situation leads to death as a result of removal of an acutely involved appendix or an acutely abscessed tooth simply because treatment was instituted when the acute process had not reached the turning point. Consider the miraculous cures attending the removal of an infected tooth, appendix, or tonsils if treated after the acute rise, or on the recovery side of the picture. Thus a disorder not amenable to a certain form of treatment in the first part of the week may yield to the same form of treatment in the latter part of the week. One should consider, then, the necessity of understanding Nature's methods more thoroughly and depending on drugs less when treating chronically diseased processes.

In the past histologists have pictured as normal the condition in Fig. 1 (A), showing the soft tissues investing the gingival portion of the crown of the tooth as well as the gingival portion of the root of the tooth, plus the cementum, periodontal membrane, and alveolar process. The assumption was that such a normal should persist throughout life; hence when tissues became detached, as in Fig. 1 (B), which was the case whenever a pyorrhea pocket developed alongside the root of a tooth, the logical treatment was to restore to normal. This meant the reattachment of the soft tissue to the root of the tooth in its original position. Again, to bring this about, magic drugs were interposed. Nothing else would do, since such a program is biologically untenable, except possibly to allow for reattachment of that tissue attached at the time treatment was begun, but detached in the process of scraping, cleaning, and polishing the roots, to say nothing with regard to the harm done by the complementary drug therapy.

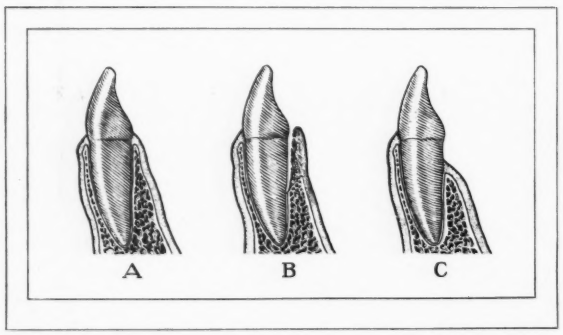

Fig. 1—A, Soft tissues investing the gingival portion of the crown of the tooth and root of the tooth, and the cementum, periodontal membrane, and alveolar process, which were formerly considered the normal that should persist throughout life; B, appearance when tissues became detached; C, appearance when Nature gains control, in terms of an orderly recession with no pockets. Treatment should be by the aid of cleanliness rather than by attempting to restore the youthful condition.

Such a plan of treatment does not consider normal changes from a physiologic point of view. The normal, Fig. 1 (A), pointed out by our histologists, is only a normal for one period of the patient's life. The normal changes as it shifts from the side of development in the picture to the side of retrogression.

The history of life implies the following: to be born, grow, attain maturity, stand still for a time, after development when the building process balances the tearing down process, then regressive changes when the tearing down process is more rapid than the building process, and finally death. There are certain metabolic changes normal at different ages; then the physiologic normal for 25 years should by no means be considered the normal for a patient of 50 or 60 years of age. It has not so been considered elsewhere in the body. Somehow, however, the dentist was expected to restore the normals of youth in the mouths of middle-aged or elderly patients. Naturally to do this the dentist was called on to substitute magic for biology. Obviously magic fails. Consider how much more sensible treatments would be if they were based on physiologic treatment according to changes that occur with age. Fig. 2 shows such a plan.

Half way up the developing line A-C in Fig. 2 should balance the half way down line of decline D-B; thus passing a line through E-F should give a picture on the developing side balancing the decline side of the picture.

To the left of E there is an erupting second molar, in a patient, aged 12½ years. Half way up line A-C is an investing tissue investing from two-thirds to three-fourths the root of the tooth. At this age the root is not fully formed; hence the investing tissue can only invest that portion that has been formed. Between 25

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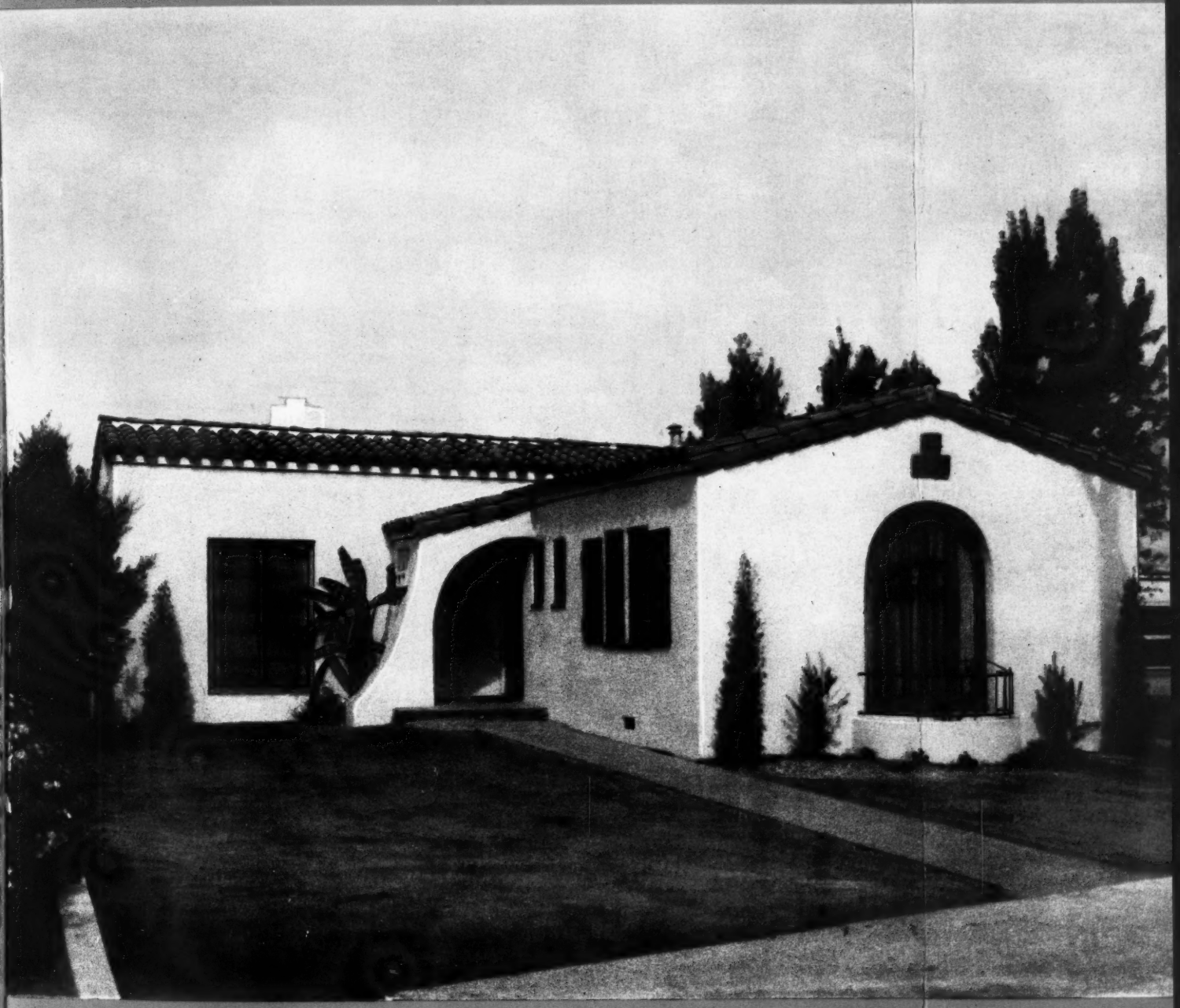
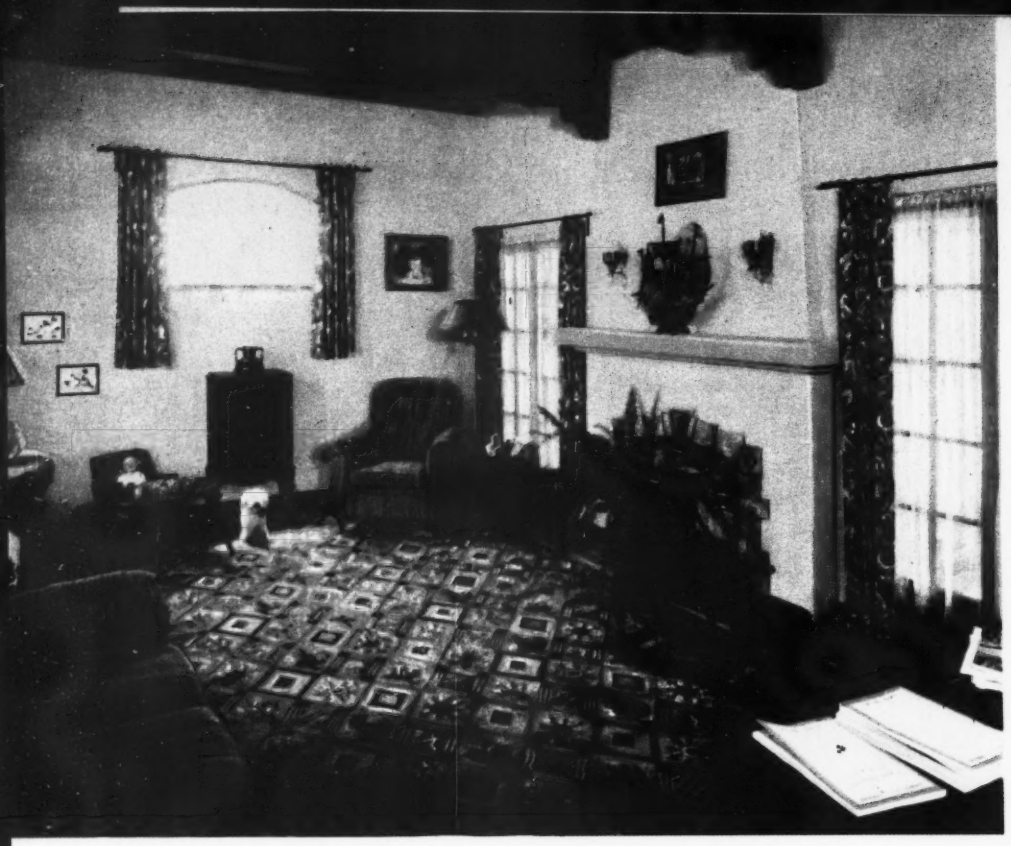
Ritter COUNSELOR

VOLUME 1 No. 2 MARCH 1933



BUNGALOW OFFICE OF DR. G. H. SPRAGUE, GLENDALE, CALIFORNIA



"How about furniture?" asked John. "Surely that mounts up into big figures?"

"That depends," answered Bell. "A surprising quantity of good comfortable furniture can be bought for little money these days. I started out cautiously, but when business once began coming along, I bought quite a lot of things to make the office more comfortable and attractive. You can take that gradually."

"I'd hardly know how to begin, if I were to undertake building and equipping a Bungalow office," remarked John.

"Take my advice, and you'll find it simple enough," replied Bell. "The first thing to do is to confer with your dental dealer and some reliable residential real estate operator. Then after you've decided on a suitable location, I'd call upon the Ritter organization to get the benefit of their experience on plans and procedure. They'll help a lot in getting the whole thing organized, and with your dental dealer, can prove of invaluable assistance in helping you to work out a Bungalow office that will be not only attractive, economical and efficient, but profitable as well."

Evening at Dr. B*ell's*

"John," said Doctor Bell, "You have no idea of how much less my Bungalow office costs than my old down-town office. You remember, I was paying $1,300 a year rent. Now let's compare that with these figures. My Bungalow office cost me $5,200 to build, including the lot. I scraped up $1,500 as a cash payment, although I could have got by with much less. Anyhow, that leaves $3,700. Now then, there's a $2,500 first mortgage which costs me $138 a year to carry. I'm paying off the $1,200 second mortgage at $500 a year, including interest. Taxes and insurance cost me about $150 a year. Allow $200 a year for water, light, heat and incidentals and that means my monthly outlay at present is about $82 as against $108 for my old down-town offices. And don't forget, about $35 of that $82 is being applied against the second mortgage—adding to my equity in the Bungalow—just like money in my pocket. At the end of three years the second mortgage will be cleaned up. Then my total Bungalow outlay will be approximately $40 a month, and I'll have an office you wouldn't be able to equal, downtown, for four times forty!"

The pictures on this page are interior views of Dr. G. H. Sprague's California bungalow, and illustrate the points made by Dr. Bell in the accompanying story.

Ritter
COUNSELOR
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VOLUME ONE | *March 1933* | NUMBER TWO

Build Yourself a BUNGALOW

Dentistry finds a new opportunity for growth in the bungalow office

"SO YOU like it, eh?" smiled Dr. Bell, as he ushered his visitor back into the reception room.

"Like it? It's a knockout! I mean it, Ted. But it's too ritzy for my blood." The reply was a challenge.

"That's just where you're mistaken John," said Bell. "This Bungalow office has put me back on my feet—it costs me far less than my down-town office—and my practice is not only growing, but is more interesting and profitable.

"Those skyscraper suites were alright in the palmy days before 1929; but they're out of key with the costs and trends of today. I wonder whether you realize that in the last ten years, suburban communities have grown far more rapidly than the cities. I think, over the past ten years, United States statistics show a ratio of 40% for suburban growth as against a city growth of only 19%.

"Cars caused that I suppose?" queried John.

"Yes, and the desire to get out of the city's noise and dirt, to a patch of green of one's own. You're situated exactly as I was, John. A big part of your practice has always been made up of business people. Naturally after the 'crash,' a lot of them lost their big-paying positions; many of them have moved away in search of new opportunities. It may be years before most of those who have survived, economically, will get back to their former incomes. That business has lost its attractiveness; and you can't afford to wait for it to come back . . . any more than I could. We've been practicing for nearly twenty-five years, John. We can't sit around and mark time at our age. That's why I say it's important that you do something to insure your future right now!"

"So build me a Bungalow, and start all over again, eh?" growled John, bitterly.

"I did it!" replied his host. "And frankly, I've never been so happy in the practice of dentistry . . . never so sure of growing success. Curious part of it is, since I've been out here, a lot of old patients who dropped out after the depression started have come back again. They're one hundred percent sold on this new location. Seem to be in accord with the whole idea. No trouble parking; and a surprising number of them live out this way."

"I suppose it helps some with your children's practice . . . noticed your Junior set-up in there . . ."

"Helps! Why John, I never had a children's practice until I moved out here. Now I've got dozens of them; they can come right from school. And I want to tell you, I never realized what I was missing in not spending part of each day with the youngsters.

"We're getting on in years, John . . . likely to get a bit rusty and set in our ways when we confine our practice to adults. Honestly, listening to the trials and tribulations of those old masters of industry made me feel like a confiding patriarch. Had me growing old before my time. And now—why man, I feel ten years younger."

John scratched his head and smiled.

"Go ahead and laugh, you old timer. But I want to tell you the youngsters have done me a lot of good.

"They're funny . . . and interesting . . . never know just what to expect. They pep me up, and I honestly believe it's improved my handling of adults. Besides, and don't overlook this one . . . they're going to be my regular patients for years to come. Another thing—you'd be astonished how many of their parents are on that appointment book out there."

"You've certainly made strides . . . you actually make me envious; and that's a very good looking hygienist you have. Part of the scenery, I suppose," grinned John.

"Glad you like her. Corking good girl. I'm calling all my old patients in for prophylaxis. She helps. And in addition gives them a wonderful health talk built around the preservation of the natural tooth. She's sold more interproximal X-ray examinations for me in the last three months than I did all last year!

"Listen, John" (as his hygienist announced a patient.) "You come out to the house with me for dinner. And afterward, we'll go over the Bungalow office subject from 'A to Izzard.' Would you like to?"

"Would I like to?" replied John with a new note in his voice. "You bet I'd like to."

"A SPRAT *to catch* MACKEREL!"

DOCTOR JONES swung his long legs over the arm of the chair; packed down the tobacco in his pipe; and looked thoughtfully at his visiting colleague.

"Listen Frank, that remark of yours this morning was a reflection on my methods. And by the Lord Harry, I'm going to make you eat your words."

Dr. Frank Hatch looked surprised; then grumbled. "Shucks, Howard, no offense was meant; but when I said that making an X-ray examination without first fixing the charge is 'a sprat to catch a mackerel,' I meant exactly that. Now listen, here . . ."

"Wait a minute. You made the charge. You might just as well have said 'a sprat to catch a sucker.' So, I'm going to do the talking."

"Well, go ahead. Expound. You can't convince me that any service can be rendered for nothing, whether it's X-ray, prophylaxis, or what not."

"Who said it was rendered for nothing? . . . That's just where you've been in the woods right along, Frank."

"You don't charge your patient when you find a clean bill of health do you doctor?" grinned Dr. Hatch.

"No, I don't . . . but give me a chance to explain before you jump at conclusions. Now take your system: you start right out trying to convince your patients that a complete X-ray diagnosis is worth $15, don't you?" . . .

"Ten dollars," corrected Dr. Hatch.

"Oh, all right—ten dollars then. Well that's what I used to do . . . and I'll bet that prefixed charge affects your patients just like it did mine . . . scares them to death about your total bill. Even when I dropped to $5 for 'interproximal' with bite-wings, I met resistance."

"Wrong approach, my boy" . . .

"Maybe so; but it didn't do my conscience any good when a patient ducked the X-ray. Everytime that happened, I found myself worrying about the things that I had missed in my superficial excavator and mirror examination. Finally I made up my mind to X-ray every patient that came into my office . . ."

"Sprat to catch the mackerel, eh?"

"Please be quiet and listen! . . . With the X-ray evidence in my hands, I am able to build up an accurate case history estimate, and have a reliable basis for quoting my fee for all the work required.

"Instead of talking to people about X-ray service and fees, and building up cost prejudice, I explain that dentistry today means both prevention and restoration; that my system is to find out positively what work is necessary by making a thorough X-ray examination. If they raise the question of cost, I simply tell them that X-ray is part of my service; and no special charge is made for it."

"Aha! a great light begins to dawn," said Dr. Hatch.

"I thought you'd come out of it," replied Dr. Jones. "And here is the interesting part of it. You know, for years, I have kept an accurate record of income by departments. I have my X-ray income to a dollar for years back. Now get this: during the comparative nine months of last year when I charged $10 for complete diagnosis and $5 for interproximal, my income from X-ray was $970. For the nine months of this year, my X-ray has netted me $1470!"

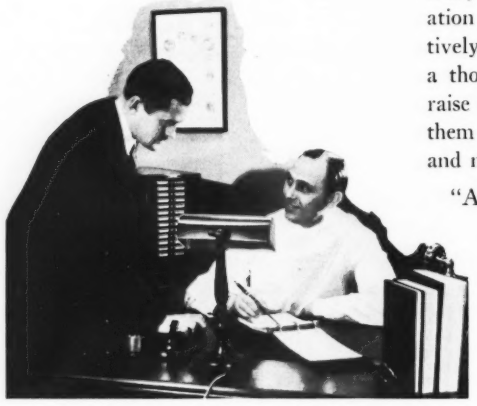
"That's more than I made! What . . ."

"Wait a minute, here's something else. That $1470 was made up of $10 and $15 X-ray charges, that were buried in my general estimate. There's no way of estimating the additional income derived from work that I never would have uncovered without X-ray diagnosis! It must be twice that amount!

"In that connection, let me read you part of a letter a friend of mine in Schenectady recently wrote to Ritter at Rochester." From a pile of correspondence Dr. Jones extracted the carbon-copy of a letter. "Here we are—now notice how this chap looks upon X-ray. He says . . . well first he has a word of praise for his Ritter X-ray, which he states has been in service continuously for eight and a half years. Then he goes on to say 'if I had not received a single fee for an X-ray during this time, this instrument has located enough additional dentistry to pay for itself many times over . . . the most important factor is in reassuring your patient that your work is correctly and thoroughly done, and that you are not afraid to face the facts as disclosed by the radiographs!'* That letter merely adds substance to what I've been saying, Frank."

"Howard, my apologies . . . I think you've shown me something," said Dr. Hatch.

"I hope so!" replied Dr. Jones. "Frank, I can't tell you the satisfaction I get from knowing that each patient is getting the diagnosis to which he is en-



"This year, X-ray has netted me $1,470!"

*This quotation is taken from an actual letter received by the Ritter Company.

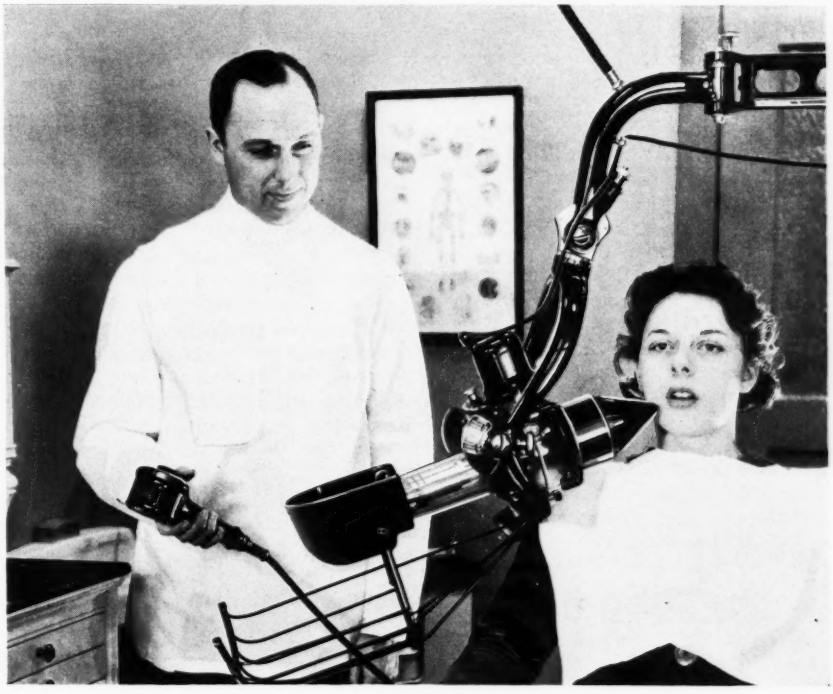
Said Dr. Hatch— *and thereupon learns something new about X-ray*

titled. Actually, we dentists are practicing medicine insofar as the mouth is concerned, and we must eliminate it as a source of focal infection. I don't know how you feel about it, but I look upon those years of X-raying, according to patient preference, as utter negligence.

"After all, Frank, we're living in an age of visual education, and what more definite visual means can we as dentists adopt to impress our patients than a picture of that patient's own mouth, showing the actual conditions that exist there!

"It's not only a sure way to bigger profits; but it's good, ethical advertising psychology to do this right now, when so many others are not doing it! And I tell you further, that after completion of the case, in most instances I am taking another set of X-rays to show my patient, by comparison, what has occurred . . . in other words, proving the value of my work. It's really remarkable how favorably they react to this procedure."

"Again my apologies, Howard. I don't know why the same idea has never occurred to me, but I believe you're absolutely right!" Dr. Hatch slapped his colleague on the back. "A sprat to catch a mackerel! I should say so . . . and what a sprat!"



"Now I X-ray every patient that comes into my office."

"DUALITE" is the winning name suggested by Dr. Victor T. Nylander, Chicago

In the January issue of the "Ritter Counselor" we offered a new Ritter Combination Intra-Oral Operating and Diagnostic Light to the dentist who succeeded both in suggesting the best name for this new light and in giving the best fifty word reason for his selection.

In the opinion of the judges Dr. Victor T. Nylander of 919 North Michigan Avenue, Chicago, Illinois, who picked the name Dualite, submitted both the best name and reason. Congratulations Dr. Nylander. You win the light.

TOMORROW'S PATIENTS *TODAY!*

The children of today will be the adult patients of tomorrow. Dentists with an eye to the future, systematically develop their children's practice.

ONE of the country's largest manufacturers was asked why he spent so much money advertising in boy's magazines when his product could be sold only to men.

"It takes only five to ten years to make men of boys. I'm creating my customers of the future, today," was the reply.

In that business viewpoint is an overwhelmingly important thought for dentistry. Today in America are over 35 million children between the ages of four and sixteen . . . almost one third th total population of the country . . . a major part of them needing dental attention.

Therein lies a vast opportunity for increased profits—a golden opportunity that embraces both this very moment and your entire practicing life-time.

Throughout the entire field of dentistry in this year of 1933 resounds a fanfare of dissatisfaction with earnings. It's true, dentistry, by and large, has suffered as a result of economic conditions; but there's no virtue in prolonging that suffering, when so simple a corrective as children's dentistry is begging for attention.

Time was when children went through school and grew up with good or bad teeth, according to parental interest, or by the grace of Providence. Today, the ever increasing attention being given to child health by the school authorities, makes sound teeth and oral hygiene imperative. The system of regular examinations creates new patients for alert dentists literally by the thousands.

Far too few dentists recognize in this trend a new opportunity, distinctly a part of this era. Ten years from now, those who neglected to engage in the progressive devolopment of a children's practice in 1933, will surely censure themselves for their oversight.

Do not infer from this comment that there are no exceptions to the rule. Throughout the country are numbers of dentists who have seen the light, and are now actively building up their children's practice. Their intense enthusiasm about this division of their practice should challenge the interest of every alert, ambitious practitioner.

How to increase patient interest and stabilize incomes is a moot topic whenever dentists meet. Can they then afford to over-look the fact that there are six hundred children to every practicing dentist in the United States today . . . and because of the inertia of a large part of the profession, this six hundred is multiplied tenfold for every dentist who actively cultivates this business.

A sensible estimate of the possible dollar volume of available child work cannot even be hazarded. But when simple examination and prophylaxis twice a year on even a hundred children can produce a tidy addition to income; the net from all the needed work on that same group should bring a throb of exultation to the heart of any dentist.

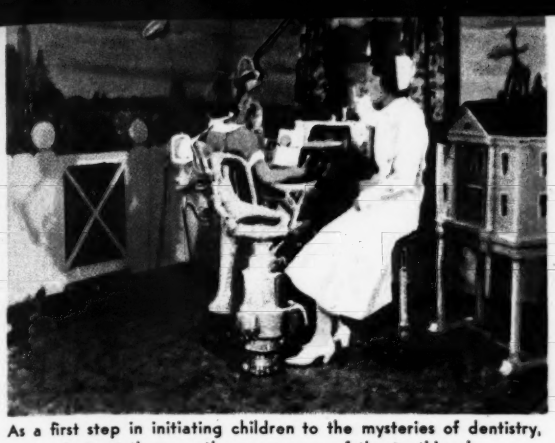
The opportunity is a wide open one; but it goes without saying that to develop a children's practice the dentist must apply certain principles and adopt a procedure different from that used to cultivate adult business.

The first essential, of course, is to make an unvarying habit of educating his parent-patients to the importance of preventive dentistry for their children. This, in conjunction with the reports on oral conditions which the children bring home from school, is conducive to active parental interest.

This educational work can be accomplished through various means. There is an abundance of intensely interesting literature available for distribution, such as Ritter's booklet "From Six to Sixteen." Mounted exhibits of children's X-rays showing typical oral conditions; models showing the effect of corrective dentistry; charts on the relation of teeth to child health; all these can be used advantageously in creating parent interest in the oral welfare of the child. Well thought out letters to parents also provide an educational medium that is both economical and effective.

But to make the work most fruitful requires the recognition of certain fundamental requisites in relation to the mental attitude of the Junior patient.

Unquestionably, of major importance, is an operating room designed to appeal to the imagination of the child. A dental chair of proper size; pictures on the walls and warm colorings all have their effective part in creating confidence in the dentist, and in relieving the tension and allaying the instinctive fear with which the child approaches a dental operation.



As a first step in initiating children to the mysteries of dentistry, instruct them on the proper use of the toothbrush.

Do the easiest operative work first to build up the child's courage and confidence.

A corner of your reception room should be arranged for children, or a special reception room can be provided, equipped with indestructible toys and suitable books to amuse the waiting patient. Some astute dentists have even adopted a photograph album in which are mounted photographs of "popular patients." Others appeal to child pride by hanging a framed Honor Roll in the reception room —and upon this "Honor Roll" goes the name of every boy and girl who submits to the operative ordeal bravely and without *undue* demonstration. Needless to say, the name goes up after the first visit whenever honestly earned; and subsequent visits become a pleasure in spite of pain. Lest the dentist look upon these requisites with fear of the expense, we hasten to say that wherever suitable rooms are available, the actual equipment can be secured for a surprisingly small investment.

To the dentist who has never given specialized attention to the practice of children's dentistry, all these formula for intriguing the interest of the Junior patient may seem to be unduly stressed. To the contrary, too much stress cannot be given them. For, here at least, the rewards will be in direct proportion to the effort expended.

In this connection. the subject is incomplete without comment on the proper handling of Junior patients. Literally volumes could be written on this subject, but a few words may be adequate to suggest general procedure for handling boys and girls of all ages:

1. Make it an unvarying rule to impress the child with your sincere regard for him. Make him feel that his work is just as important as his parent's.
2. Do not "little man" him under any circumstances. Talk to him naturally, humanly and interestedly. Find out those things that interest him and interest yourself in them.
3. Forget yourself, and try to think in terms of the youngster's sensations and reactions. Remember that fear is not a normal characteristic of children. Their entire existence is founded on trust. Their viewpoint is essentially a happy one. They respond to kindliness and a smile, and shrink from curtness, coldness and a frown.
4. Recognize the existence of three classes of children: the average, normal, well-mannered, intelligent child; the timid, bashful child with a predominant fear-complex; and the obstinate, spoiled, disobedient type. Study these types, and sensibly discriminate between them in your handling.

The dentist who has children of his own will understand precisely the definite line of distinction between these types. But, bachelor or benedict, every dentist who engages in the practice of children's dentistry will soon learn to adjust his handling of the young patient to meet the needs of the case.

Children's dentistry, from the standpoint of interest and novelty, relegates an adult practice to a grey and neutral background.

But that, of course, is a minor consideration. What's more important is the fact that steady development of a children's practice is the most lucrative form of profit-promotion . . . for each young patient whose patronage is cultivated today becomes the adult patient of the future.

They grow up . . . with confidence in only one dentist . . . him, who has served them through those adolescent years. And the dentist who so serves—will have only one regret—that they *had* to grow up!

Have you Investigated Practice-Building through Visual Education?

Hundreds of dentists have written for further information on the Visual Education Plan described in the January issue of the Ritter Counselor. You'll want to know about it. Write for the descriptive folder—"Now the Story Can Be Told." Educational Dept., Ritter Dental Mfg. Co., Inc., Rochester, N. Y.

A junior operatory designed and equipped to win child friendship and cooperation.

How OLD *is this Dentist?*

FIRST COVER ONE HALF OF THIS DENTIST—THEN THE OTHER HALF—AND SEE WHAT MODERN EQUIPMENT CAN ACCOMPLISH

THE late financial debacle has put hundreds of older dentists, who hoped to retire on their hard earned savings and investments, back into the harness again.

They're in competition with progressive, aggressive youngsters . . . but age and experience can be turned to an advantage *in the proper environment.*

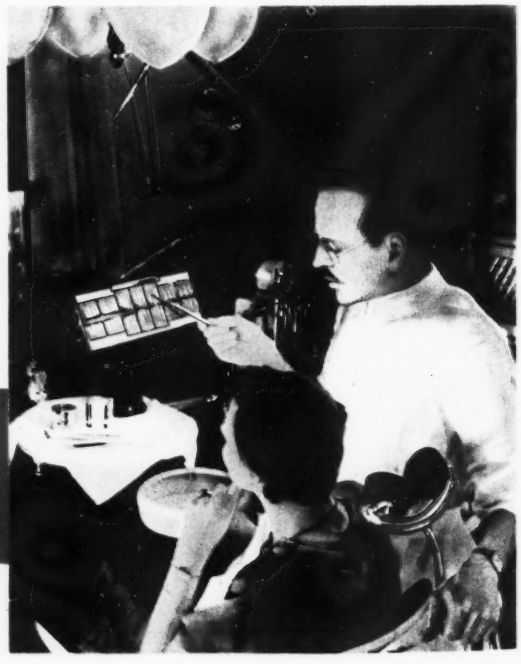
Install an older dentist in a modern, hygienic, up-to-the-minute office; surround him with the impressive, efficient paraphernalia of modern dentistry . . . and years fall off him like discarded sackcloth.

Middle age becomes a mantle of dignity, experience and competence.

Let those older dentists who are determined to make a new success, carefully consider the psychological and practical advantages of discarding ancient equipment for new.

In the eyes of his public, a dentist is as *old* as his office!

Write for complete literature on the Dualite—Ritter's new combination intra-oral operating and diagnostic light; Ritter X-ray, Ritter Sterilizer, Ritter Motor Chair, Ritter Model D Unit—each has a place in any plan of modernization.



Ritter

Ritter Dental Manufacturing Co. Inc., Rochester, N. Y.

(Continued from page 109)

Fig. 4 (Case 4)—A boy, aged 9½, has been wearing the retainer shown here since he was 5 years of age. Permanent bicuspid is shown erupting; the retainer was removed at this time. The retainer should have been removed earlier to avoid the buccal displacement of the tooth; however, the bicuspid moved into place in a short time.

Fig. 5 (Case 5)—First deciduous molar extracted because of apical abscess in a child, aged 3½ years. In constructing a space retainer, I use the orthodontic band on the molar. This may have a full or partial cast occlusal, as the case demands. Two bars are then soldered at the line of occlusion, one from the buccal and one from the lingual of the band and these bars converge at a little above the distal contact point on the tooth anterior to the space. The bars are soldered at this point, and a small bar is soldered around the distal of the tooth, from labial to lingual, and this, in turn, is soldered to the two bars at the point of convergence. It is quite impossible for the posterior banded tooth to drift, rotate, or tip with such an appliance, although it is attached to only one tooth. This two-bar retainer has proved satisfactory in these cases. It retains the tooth in perfect position but still allows for its normal movement.

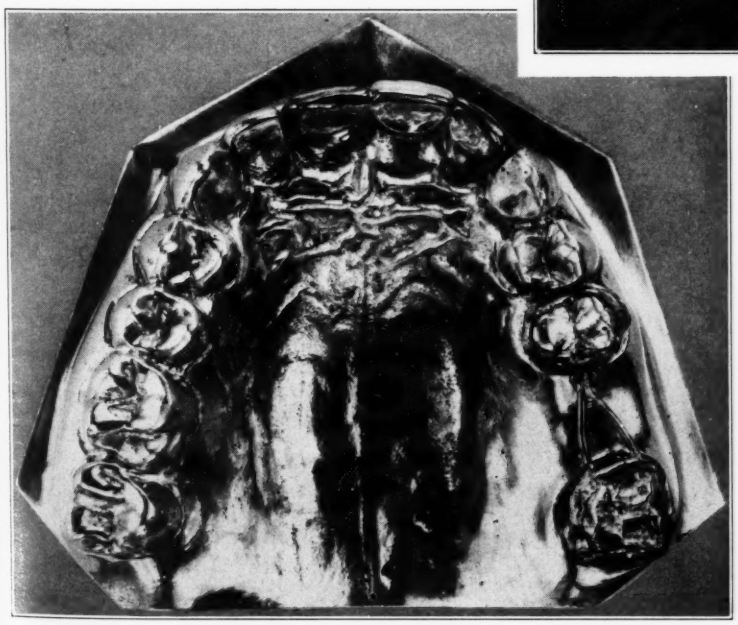


Fig. 6 (Case 6)—Both the second bicuspid and second molar are banded in this case of a boy, aged 14. This is a broken stress retainer which has proved successful in cases of permanent teeth.

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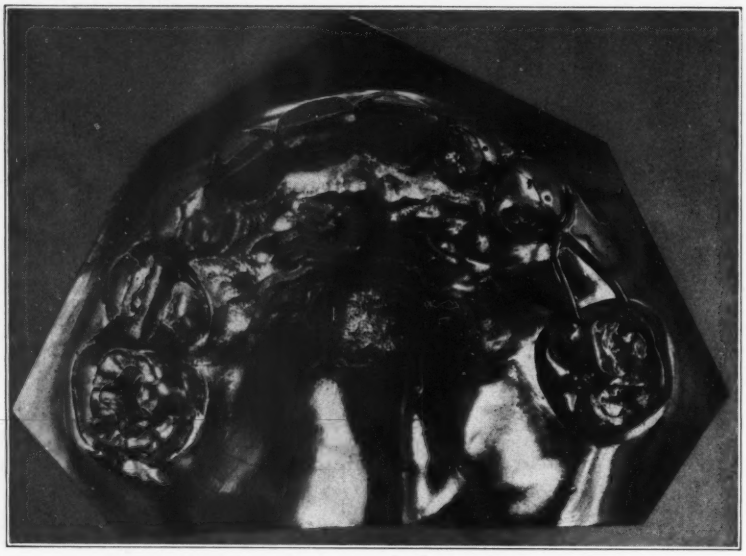

Fig. 7 (Case 7)—Upper left first deciduous molar had an apical abscess, in a child, aged 4 years; removal was advised. The left second deciduous molar was conical in shape, making a well fitting band difficult to construct. In this case a full cast crown was used, a part of the occlusal being cut out before casting; thus the overlay fits perfectly and there is sufficient retention to hold the retainer in place. An anterior bridge and two inlays on the upper right side are also seen here.

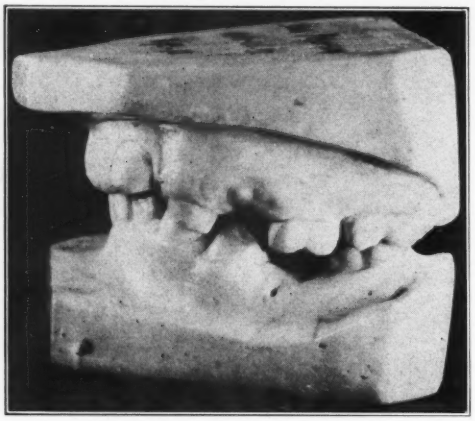

Fig. 8 (Case 8)—Loss of upper first deciduous molar and lower second deciduous molar in a boy, aged 8 years. The first permanent molars are in perfect occlusion but the upper second deciduous molar is extruding from its occlusal plane. This extrusion could have been avoided by the placing of a retainer.

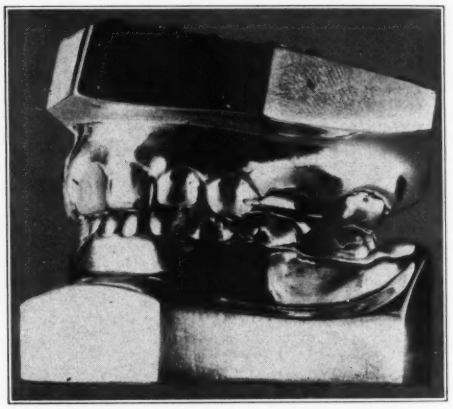

Fig. 9 (Case 9)—Models of a patient, aged 5 years, showing an upper left retainer and how the bars are carried along the line of the occlusal plane to avoid extrusion of the lower molar as shown in Fig. 8.

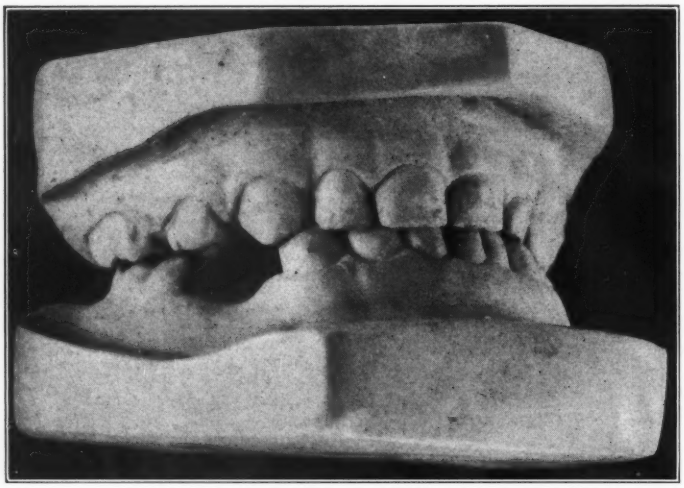

Fig. 10 A (Case 10)—Model shows the appearance after extraction of lower right first deciduous molar. With this exception, the child had a well developed mouth and the teeth were free from caries. The masticatory surface on the lower right side was restored by a bridge. This is an ideal case for this type of restoration.

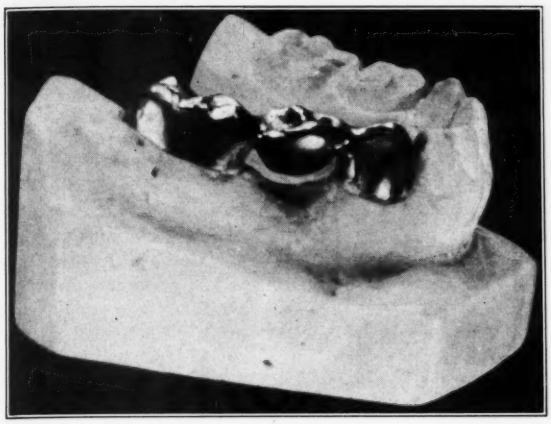

Fig. 10 B (Case 10)—Constructed bridge in place. Full cast crown on molar, three-quarter cast overlay on cuspid and dummy soldered to abutments. It is not necessary to make any tooth preparation in many of these cases; in fact, unless the tooth is a decided bell shape no cutting is necessary.

Fig. 10 C (Case 10)—Occlusal and lingual views of bridge.

ABOUT OUR CONTRIBUTORS

CLAUDE WILLIAM BIERMAN received his D.D.S. in 1919 from the University of Minnesota. Doctor Bierman is the author of numerous professional magazine articles relating to children's dentistry and conducts his own course in that subject. He is a member of the A. D. A., Minnesota State Dental Society, and local dental societies. Doctor Bierman's practice is limited to children's dentistry and orthodontia at 1546 Medical Arts Building, Minneapolis, Minnesota.

M. HILLEL FELDMAN contributed articles in the February and September, 1932, issues of THE DENTAL DIGEST.

ROLLAND R. JONES received his D.D.S. in 1907 from the University of Minnesota, and was on the faculty of that school for two years. Doctor Jones is the author of several articles. He is a member of the A.D.A. and component dental societies, and Delta Sigma Delta, and has a general practice at 730 La Salle Building, Minneapolis, Minnesota.

GOTTFRED RUDOLPH LUNDQUIST received his D.D.S. in 1917 from Northwestern University School of Dentistry, and in 1929 became a Fellow of the American College of Dentists. Doctor Lundquist is associate professor of oral pathology at his Alma Mater, and is the author of several professional magazine articles. Doctor Lunquist has a general practice at 180 North Michigan Avenue, Chicago.

WESTON ANDREW VALLEAU PRICE received his D.D.S. in 1893 and honorary M.S. in 1913, both from the University of Michigan. In 1922 Doctor Price became a Fellow of the American College of Dentists. He is a member of the A.D.A. and component societies; Federation Dentaire Internationale; American Chemical Society; Biochemical Society; International Association for Dental Research; A.A.A.S.; Radiological Society. Doctor Price is the author of "Dental Infections, Oral and Systemic (Vol. I) and Dental Infections and the Degenerative Diseases (Vol. II)," Penton Publishing Company, Cleveland. He is also the author of an extensive bibliography of periodical articles on five main subjects on which he has spent more than thirty-five years in research; (1) the earliest application of the roentgen ray to dental science; (2) extensive studies on the relation of dental infections to systemic diseases; (3) seasonal tides in defensive activators (vitamins) and their relation to disease; (4) researches on the prevention of skeletal decalcification and spontaneous fracture and for assisting in the healing of ununited fractures; (5) researches on the cause and prevention of dental caries and associated degenerative diseases. Along with his work in the Dental Research Laboratories Doctor Price carries on an active clinical practice in diagnosis and control of dental caries at 8926 Euclid Avenue. Doctor Price will be the subject of a special feature article in the April number of THE DENTAL DIGEST in which a new department, *The Dental Scene*, is to begin.

(Continued from page 110)

and 50 the investing tissues may invest the entire root of the tooth unless disease intervenes and pockets form to complicate the picture. It is assumed that in the normal person the crest of the gingivae, the epithelial attachment, and the investing bone are shifting apically at approximately the same rate after full development of the root with its investing tissue takes place, commonly known as physiologic absorption and recession characteristic of the age picture. Rather than term this a pure recession the Gottlieb school of thought would call this process one of modified eruption. It is probably a combination of both, eruption and recession, the recession being the more prominent factor because of the repeated injuries the soft tissues are subject to, which means inflammation, a symptom of which is swelling; then subsidence of the inflammation, recovery and shrinkage follow. If this process is repeated year after year, the decline picture is reached which is noted in middle-aged and elderly patients' mouths. Fig. 2 shows the investing tissue investing only two thirds of the root of the tooth. The recession was orderly as described; no pockets were formed because Nature had control. Thus the developmental side balances the declining side of the picture. On the developmental side there is only from two thirds to three fourths of the tooth invested in normal tissue; likewise, the decline side of the picture has only three fourths of the root invested in remaining healthy tissue. A balance on a physiologic basis is noted; a large portion of the life history cycle of changes takes place between the ages of 12½ and 62½ years. Some tissue is lost in the interval, which means root development, eruption, occlusion, and the injuries attending normal use of teeth in the act of mastication—all on the basis of Nature's own control measures.

The recession in the mouth of a patient, therefore, on the decline side of the picture with from two thirds to three fourths of the length of the root invested in healthy tissue is Nature's way of preventing the development of pyorrhea pockets since the recession balances the detachment of the tissues as they take place in mouths used actively in mastication. Such recessions when no pockets are present should not be considered as pathologic conditions, since Nature takes such measures of control to prevent pocket formation. These normal recessions of middle-aged and elderly persons should not be looked on adversely from the standpoint of restoration to the normals of 20 to 30 years of age, which are esthetically more beautiful, because such a thesis implies restoring the mouth to youth again, and that plan is biologically untenable.

Reason says that if Nature in her wisdom controls or prevents pyorrhea by physiologic absorption and recessions which we see in the mouths of middle-aged and elderly patients that biologic truth should be accepted. The sociological desire of remaining perpetually youthful and beautiful, which implies reattachments of the detached tissues to their original levels at maturity ought not be interposed. On a biologic basis, the treatment of pyorrhea, so called, is placed on the practical basis of reason and not the unpractical one of desire and imagination.

The third problem is the occlusal and mesial drift of teeth. Every dentist has observed the occlusal movement of teeth when the tooth opposing it has been removed. Many dentists have not observed, as did Black about

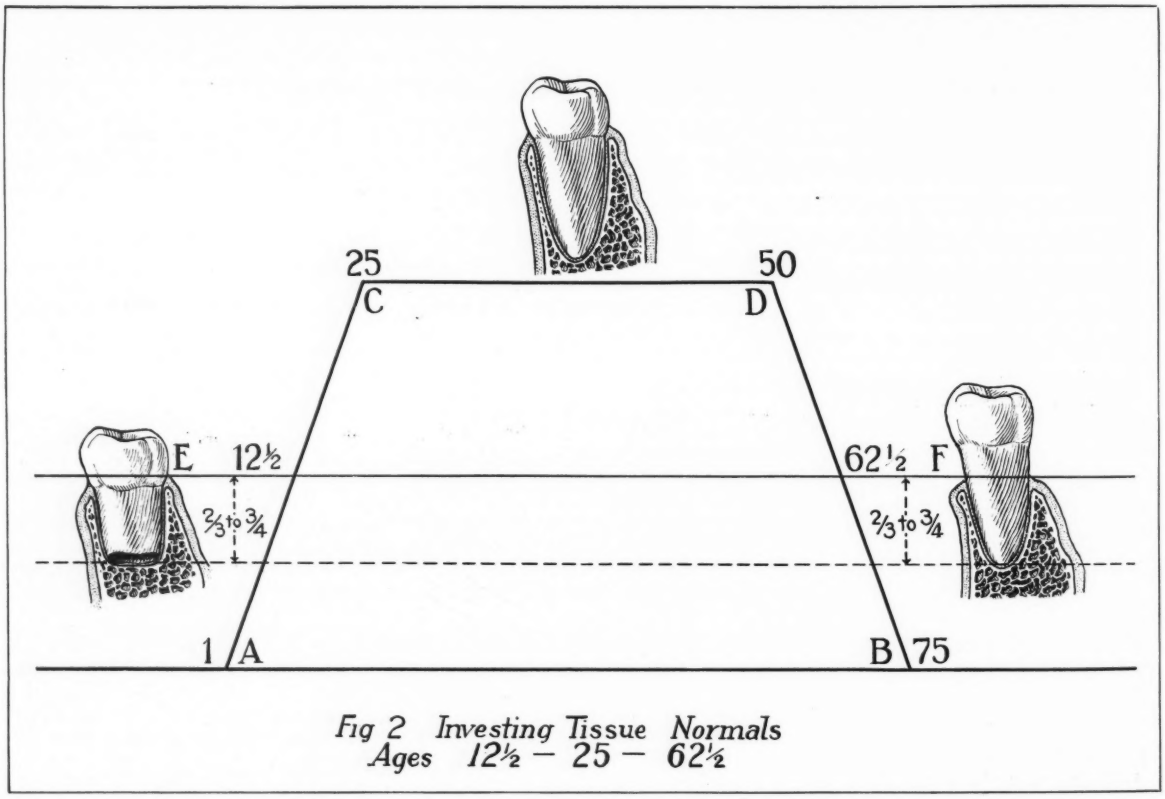

Fig 2 Investing Tissue Normals
Ages 12½ – 25 – 62½

Fig. 2—Line A-B, beginning and end of life history process; A, starting point, patient aged 1 year; C, maturity, age 25; line C-D, time in which building process balances tearing down process, 25 years to 50 years of age; D-B, decline at B, 75 years of age. History of that patient's life is over.

thirty years ago, the mesial drift that takes place. Black measured the distance from the distal of the right mandibular third molar around the arch to the distal of the right lower left third molar in the mouth of a patient, aged 25. This mouth in which no extractions had been made, and in which no restorations had been placed was measured in the same manner about twenty years later, or at 45 years of age. The measurement revealed a loss equal to the mesio-distal breadth of a lower molar or more than half an inch. The contacts were maintained, but they were somewhat flattened by wear; hence it is noted that by interproximal wear such a space was lost. It could mean only one thing, a mesial drift of teeth. This was verified later in the histologic works of Gottlieb and his co-workers. Thus is noted the premise of drifting teeth with its consequent absorption and rebuilding of the investing tissues under normal conditions. Consider the consequences of such drift when the supporting structure is not equal to rebuilding support for the tooth in its new position. This means a loosening of the tooth or teeth involved. Such a tooth cannot be worn off in mastication, and the lack of wear by grinding must be compensated for to relieve the traumatic effect of occlusion of the tooth in its new position; thus in grinding one is merely treating a symptom or a sign, not a cause. But the treatment of most diseased processes is based on symptoms rather than causes.

Treatments are usually compensatory in form. Dentists build contacts, normal tooth form, and proper occlusion to protect the gingival tissues from injuries. Overhangs are eliminated, and the teeth are ground for the same reason. The teeth and their surrounding soft tissues are brushed because the mouth with present-day habits of mastication is not self-cleaning. This is particularly the case in the adult after the gingival recession, characteristic of the age picture, has taken place. Here the septal spaces are wider than was the case in youth on the developmental side of the picture where the septal gingivae filled the septal space to the contact. As a result of the normal age recession picture one is required to use perhaps such aids as toothpicks, dental floss, and modify the brushing technique along the lines of Charter's method[1] to force the bristles of the toothbrush in the septal spaces to clean the area and reduce inflammatory reaction of the gingivae to such irritants as accumulate there.

All in all, local treatments are compensatory in form. If one succeeds, then, in keeping inflammatory processes under control, it is likely that the shifting line of attachment of the soft tissues to the tooth root will slow up considerably also. However, only active use of the teeth could build any tissue tone in the cementum, periodontal membrane, and alveolar bone, and then only if the patient's body had enough tissue tone to react to such stimulation.

If tissue tone or resistance is present, however, even the shifting epithelial attachment and drifting teeth are orderly processes. Absorption and rebuilding processes occur; a suitable functioning apparatus fitting the age picture is provided. This, then, is not a picture of disease in spite of the fact that it does not look like the normals of twenty years previous in that patient's life.

[1]Charters, W. J.: Eliminating Mouth Infections with the Toothbrush and Other Stimulating Instruments, THE DENTAL DIGEST, **38**:130 (April) 1932.

A SIMPLE TECHNIQUE FOR REMOVING COPPER BAND IMPRESSIONS

WALTER H. JACOBS, D.D.S.
New York

No model can be better than the impression. This fact is particularly important in indirect inlay work. The removal of the compound-copper band from the tooth is often the step that distorts the impression. When the removal is attempted with the fingers, there is a chance of crushing the band or of causing movement and distortion. By using the instrument described here the compound-copper band and the impression are removed simply and accurately.

The instrument consists of a flat circular portion, the diameter of a large copper band, with a small loop on its top surface and a horizontal projection on its under surface. The instrument can be cast all in one piece by using two thicknesses of 30 gauge casting wax for the disc, and waxing the loop to its upper portion and the horizontal portion to its under surface.

When the band is in position on the tooth, the under surface of the disc with its horizontal cross bar is placed over the band so that the bar engages the compound, as shown in the accompanying diagram. When cool, the impression may be removed by grasping the loop on the top of the disc with a pair of pliers and directing the force parallel to the long axis of the tooth.

It is best to make up three or four of these instruments to suit the width of the band used in the particular impression.

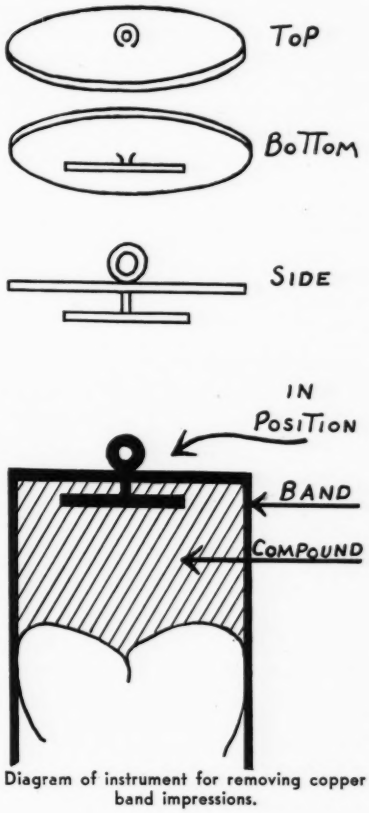

Diagram of instrument for removing copper band impressions.

SIMPLIFIED TECHNIQUE FOR REMOVAL OF MALPOSED MANDIBULAR BICUSPID

M. HILLEL FELDMAN, D.D.S.
New York

A FREQUENTLY troublesome operation in the practice of exodontia is the removal of a mandibular bicuspid standing in lingual relationship to the regular arch. When the space between the adjacent teeth does not permit the introduction of the forceps, this type of extraction becomes further complicated. In the case shown in Fig. 2 (A) the crown of the second bicuspid was not fully erupted. Several unsuccessful attempts were made to obtain a purchase on the tooth with the forceps beaks. The flap operation was then resorted to and the tooth removed as follows:

The special flap knife was used to dissect the labial soft tissue investment. The outline of the incision is shown in Fig. 2 (B). The mucoperiosteum was then dissected, so that the buccal alveolar bone was exposed.

A preoperative roentgenogram (Fig. 1) is necessary in order to carry out the next step. My special drill was introduced into the bone so as to extend into the root substance (Fig. 2, C). Without a roentgenogram the proximal aspect of the molar and the first bicuspid might be cut into with the drill.

The patholever, specially designed for these drill and lever operations, was inserted into the bone path and the root was engaged for delivery. Final trimming of the bone margins was then effected with the rongeur, and the flap of mucoperiosteum was reattached with sutures.

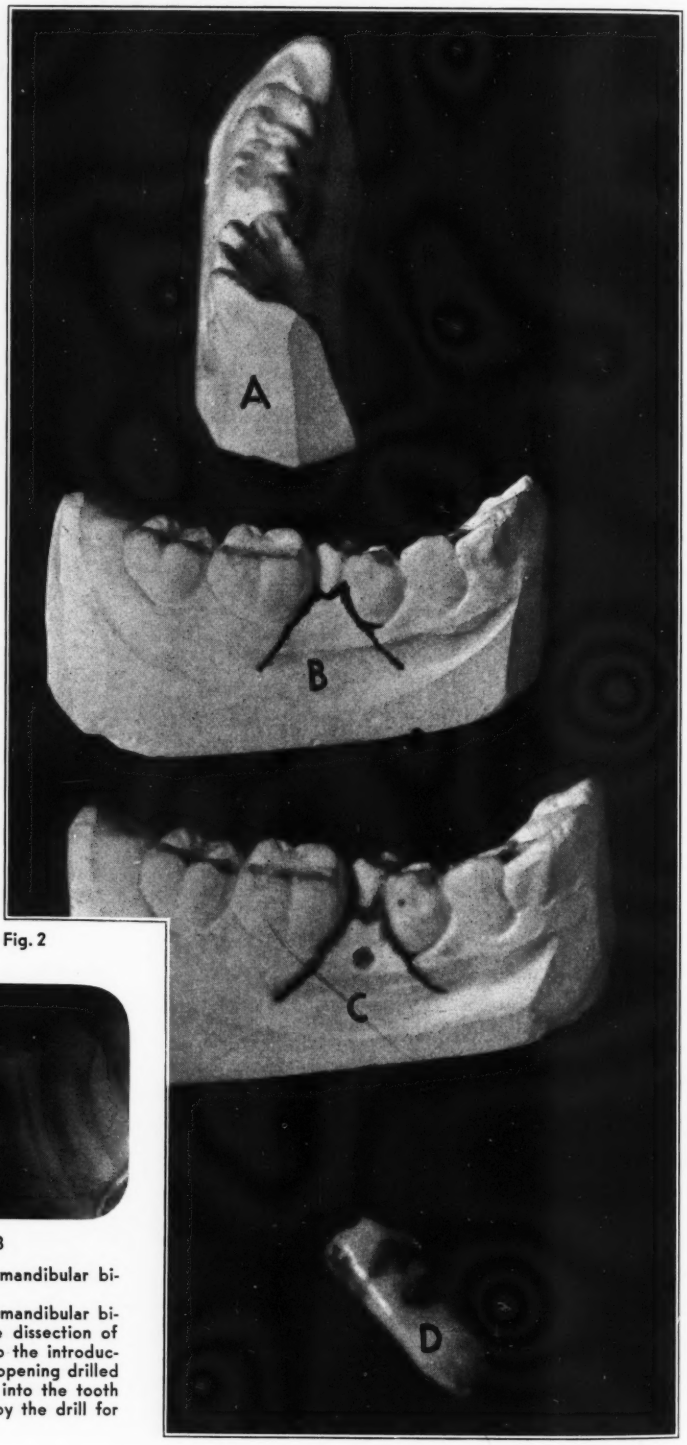

Fig. 2

Fig. 1A

Fig. 1B

Fig. 1—A, Preoperative roentgenogram of malposed mandibular bicuspid; B, postoperative roentgenogram.

Fig. 2—A, Model of case before operation, showing mandibular bicuspid in lingual malposition; B, line of incision for the dissection of the labial mucoperiosteum from the bone preparatory to the introduction of the drill; C, diagrammatic representation of the opening drilled into the buccal plate to create a bone path extending into the tooth to be removed; D, tooth removed, showing groove cut by the drill for the reception of the patholever.

The Editor's Page

MANY of the dental economic preachments of the past dealt with a consideration of how to handle the patient *after* he had come to the dental office. Most of such theories of patient management were based on the assumption that the patient was available. It was simply a matter of presenting services to persons who were already favorably disposed; their presence in the dental office indicated that. These teachings were satisfactory enough in the so-called "new era of prosperity," when people had the money to buy services and *things*. Now, when incomes are reduced, when people are not coming in great numbers to the dental office, and when those who are coming are usually only buying the dental necessities, some method of education of the dental patient seems desirable.

Just what method should be used to attract patients to the dental office has been a subject of heated discussion. Some men have advocated frank and pure advertising by professional groups, suggesting that the newspapers, magazines, and the radio be used. The paid-publicity program of the American Dental Association was discontinued by action of the House of Delegates at the Buffalo meeting, because of the vigorous protests of groups throughout the country. This action was taken not because the idea of public education on dental affairs was considered to be bad but because it was believed that the method of paid publicity endangered the professional spirit and, as important as anything else, the cost of an effective campaign would be prohibitive.

We know of no method of publicity or education that would be economically and ethically possible for the profession to undertake which would send any large number of patients to dental offices. The best most of us can do is to attempt to handle the patients that we have now more satisfactorily and to begin a campaign of education with them. Assuming that we take the time and the effort to educate the patients that we are now caring for, we might expect to accomplish three things: namely, (1) interest a certain number who are in a position to pay for services in the necessity of services that they are now going without; (2) create a demand for services for those who cannot now buy which may be translated into effective demand in the future; (3) create an interest in the minds of patients which may in turn result in referred patients. To be specific in these three respective cases: First, some people still have money. One of these persons has an outworn vulcanite full denture. Perhaps this patient may be interested in a more efficient and esthetic denture. Tell him the story. Second, another patient may need a bridge but is not at the moment in a position to have it constructed. Even if he cannot buy it *now*, tell him why it should be made and what may happen if it is not made. Futurize this demand. Third, still another patient, if told the story of children's dentistry, for instance, may refer her friends' or relatives' children for care.

We are not suggesting that the dental office be transformed into a salesroom, or that we bore our patients with the details of dentistry. There is much in the story of dentistry that is interesting and that we may convey to our patients in pleasant doses. Rather than discuss the dour depression we should avail ourselves of the excellent opportunity that we have for person-to-person education. The responsibility of the individual members of the medical and dental professions is to teach as well as to perform.

Because we believe that at this particular time the greatest economic opportunity that we have is in the education of the individual dental patient, and not in mass advertising, we began in the February issue of this journal a series of charts which we hope dentists will find of practical auxiliary value in the visual education of their patients. We have already prepared six charts in this series, one of which will appear each month for the next six issues. There will be more if the reader-demand warrants it.

A suggestion for dentistry during the depression is: Take more time with each patient when time is so plentiful, and tell each the story of dentistry in the terms that he can understand. Use the visual method of presentation wherever possible—charts, such as these in our educational series, roentgenograms, pictures, free hand drawings, a blackboard. The much used expression "one picture is worth 10,000 words" holds as true for dental patient education as for any other educational attempt.

"Doctor, What Can I Eat?"

A LOGICAL QUESTION when mastication is difficult or well nigh impossible—when strength and nerve poise must be maintained and stamina built up to endure the hardships of prolonged dental operation. At such times why not suggest Ovaltine as a diet reinforcement? It requires no mastication and besides adds important food properties. It promotes appetite with its appetite producing vitamin B. It adds valuable proteins, carbohydrates and fats, minerals, notably **iron, calcium** and **phosphorus.**

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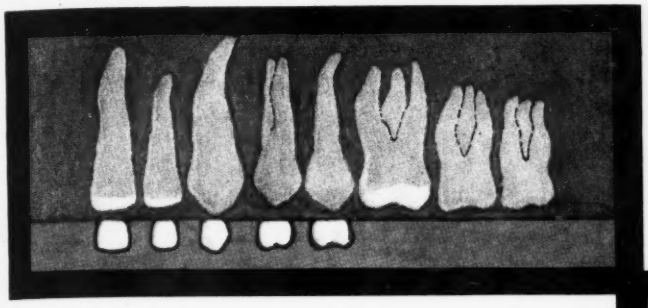
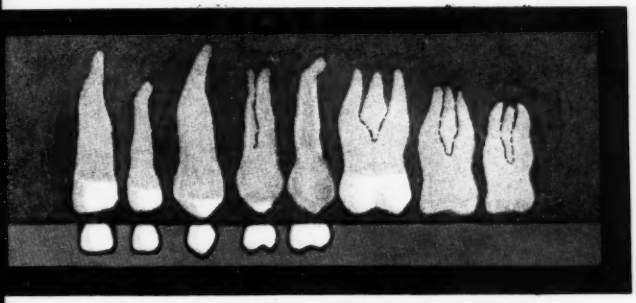
THE EDUCATION OF THE DENTAL PATIENT*

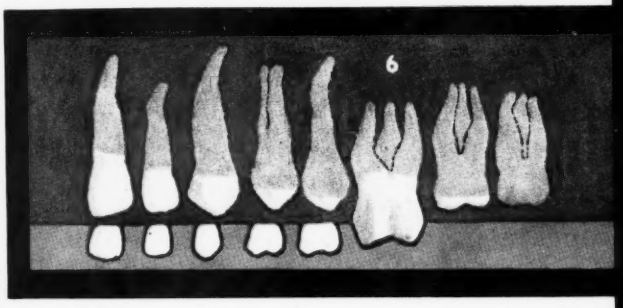
II. DEVELOPMENT AND ERUPTION OF TEETH



AGE TWO

AGE FOUR





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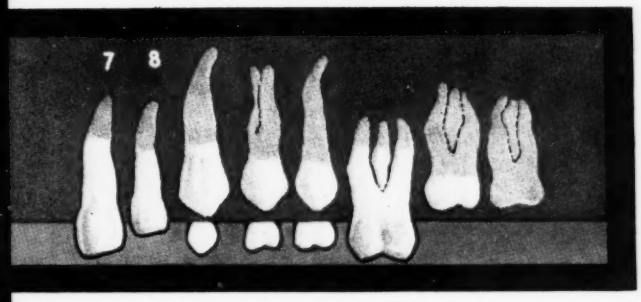
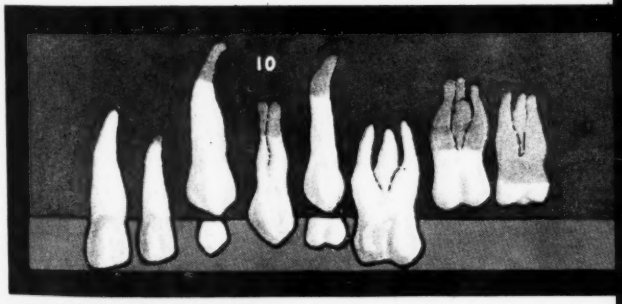
AGE EIGHT





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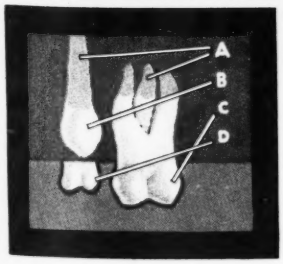


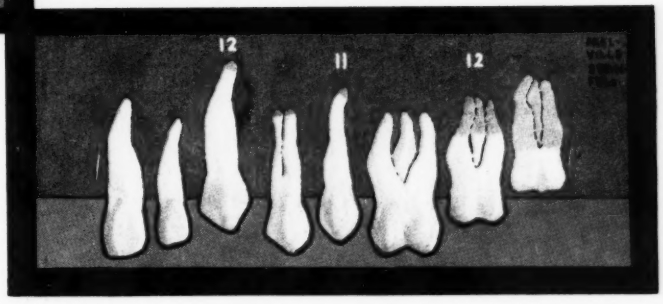
A. GRAY shows the structure not yet developed.

B. WHITE shows the structure developed but the tooth unerupted.

C. YELLOW shows the tooth erupted.

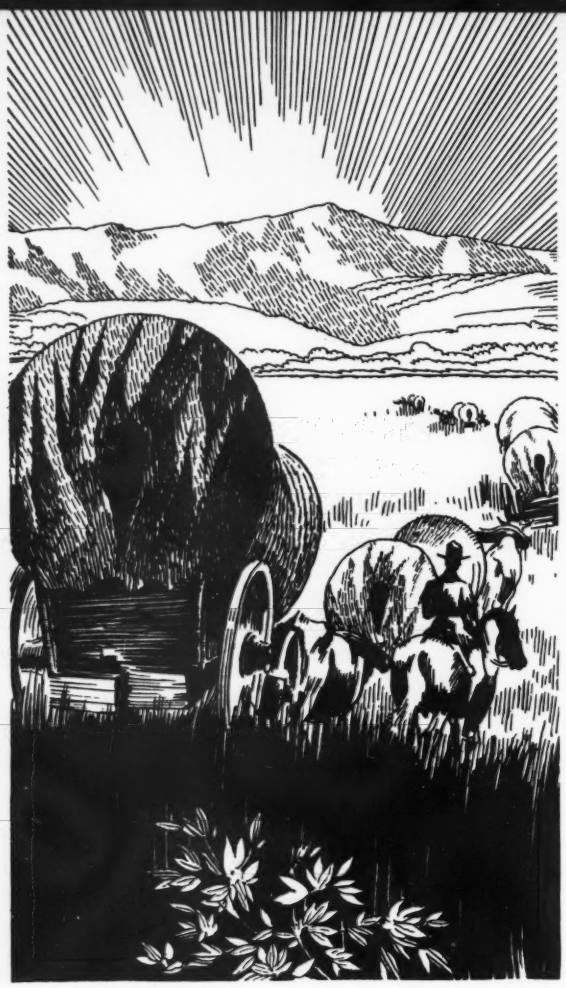
D. Deciduous dentition.

AGE TWELVE



*This is the second of a series of charts intended for the use of the dentist in explaining important normal and pathologic dental conditions to his patients.

(See The Editor's Page, this issue.)



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Pain also impels the patient to postpone additional work until some distant date.

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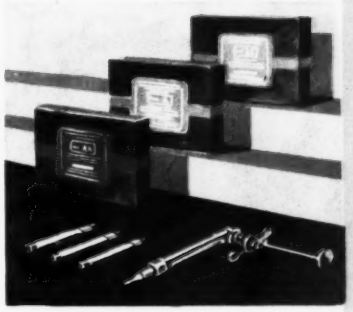
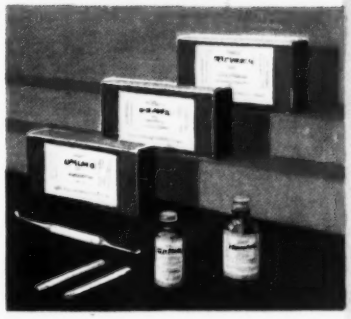


Made from the purest ingredients, after standard formulas, with meticulous care in compounding, Cook and Waite Local Anesthetics possess uniform anesthetic potency, sterility, and safety. Their low potential acidity renders them free from tissue irritation and post-operative complications.



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By
WILTON W. COGSWELL
D.D.S., F.A.C.D.

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An item in your accounts payable ledger this month as follows: "one copy of DENTAL ORAL SURGERY" really wouldn't be an expenditure. It would be an investment in better technique and the charge in your account book could be balanced by the furtherance of your knowledge of the all-important subject of Oral Surgery.

DENTAL ORAL SURGERY is a textbook that will help every dentist to a better understanding of the anatomic structures of the mouth and the principles involved in the successful removal of teeth. Every Dental Digest reader should have a copy of this book in his library. It is written in an understandable manner and it is practical in every respect. And above all, it contains over 500 illustrations—illustrations that really show you the technique the author has used successfully for many years.

The cost is only $10.00 per copy. We urge you to order a copy today since the first edition is limited. Use the coupon on the last page of this issue. It is for your convenience.

THE DENTAL DIGEST

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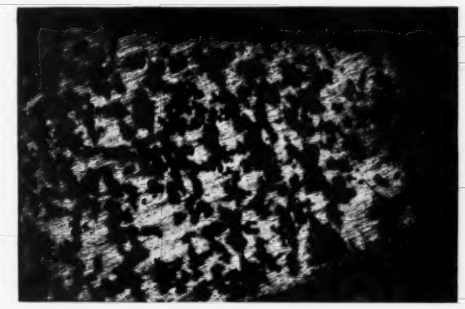
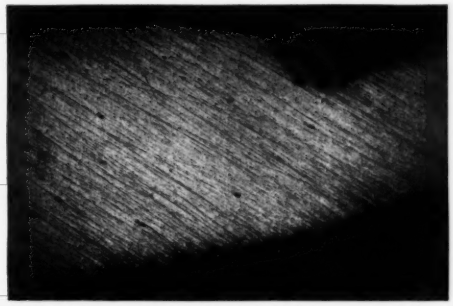
BRITTLE CASTINGS

One of the most common causes of brittle castings, especially of the partial denture or cast clasp type, is "shrink-spot" porosity, resulting from improper sprueing. An example of this type of defect is shown in the accompanying micrographs.



Section through a cast clasp near the sprue. The dark spots are voids or "shrink-spot" porosity. This section of the clasp was extremely brittle and weak.



Section through the end of an arm of the same cast clasp. Note the absence of porosity. This section of the clasp was strong and tough.

Cause — When molten metal is cast into the mold, the outside of the casting cools most rapidly and freezes first, forming an outside shell of solid metal while the center of the casting is still molten. As freezing progresses, this shell grows thicker and the thinner sections of the casting freeze solid. If a long thin sprue is used, the sprue also freezes solid, thus preventing any additional liquid metal from entering the mold. As the molten metal in the thicker sections of the casting cools and freezes, it shrinks and, since no more metal can enter the mold, this shrinkage produces voids or "shrink-spot" porosity The thicker sections of the casting and the point of attachment of the sprue are especially susceptible to this type of defect.

Effect — Such porosity often results in weakness and extreme brittleness. Furthermore, porosity, when exposed by grinding and finishing, tends to collect and hold the mouth fluids causing any solid matter in the saliva to be deposited on the metal. This deposit becomes stained and is a common cause of discoloration or so-called "tarnishing".

Remedy — This defect can be eliminated by placing a wax ball on the sprue, not more than 1/16 of an inch away from the casting, and also attaching the sprue to the thickest part of the casting. The wax ball should be thicker than the thickest section of the casting, and the sprue between the ball and the casting should be thickened slightly with wax. The ball provides a reservoir from which molten metal can be drawn into the casting to fill the voids produced by the shrinkage.

For a more detailed description of this and for other suggestions on sprueing, refer to the Gold Book, obtainable on request.

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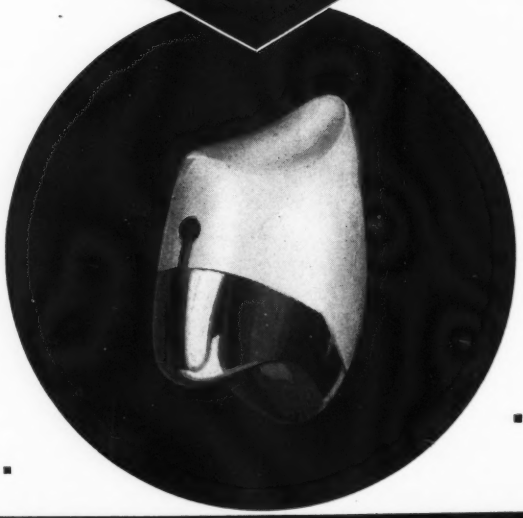

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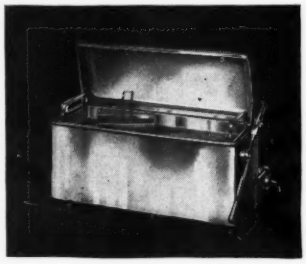

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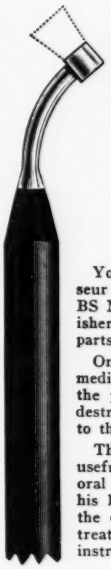

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THE DENTAL DIGEST
1125 Wolfendale Street **Pittsburgh, Pa.**

We reprint the Jan. 5th Radio Announcement from Amos 'n' Andy

A number of dentists have written for a copy; so we reproduce it here, believing you, too, will be interested in this message heard by ten million people

Bill Hay: Two nights ago Junior Jones was awakened by a terrific toothache. During the past two days the dentist has been busy repairing the damage which decay had done. Tonight we look in on the Joneses at the dinner table.

Wife: Well, John, I'm certainly glad that Junior's teeth are all fixed up now.

Husband: You bet I am, too.

Wife: We certainly won't be guilty of neglecting his teeth again, whether they're baby teeth or permanent teeth. Dr. Brown gave me quite a talking to about that.

Husband: It was pretty darn nice of Doc to put off that hunting trip, so that Junior wouldn't have to miss any school. He's a fine fellow, Doc is. I've always had a lot of confidence in him, somehow.

Wife: Yes. But, John, I'm terribly embarrassed about one thing.

Husband: What's that?

Wife: We haven't paid the bill for the work he did on your teeth over six months ago . . . and his bill really was awfully reasonable.

Husband: Well, I meant to get around to it. But, after all, you know we've had a lot of bills to pay.

Wife: Were the ones we paid any longer overdue than Dr. Brown's?

Husband: No, I guess they weren't. But, you see, I got two or three rather sharp letters and I suppose it's only human nature to pay the people first who make the loudest noise. But you're right, it's not fair to a man like Dr. Brown to take advantage of his good nature.

Wife: Let's write him a check for at least half the amount tonight.

Husband: Okeh. It's a good thing dentists are not like big business concerns or Dr. Brown would have refused to take care of Junior's toothache until we had paid our bill. Let me have the check book, Mother, and we'll get that check in the mail tonight.

Bill Hay: To fight film and dental troubles use Pepsodent Tooth Paste twice a day—see your dentist at least twice a year.

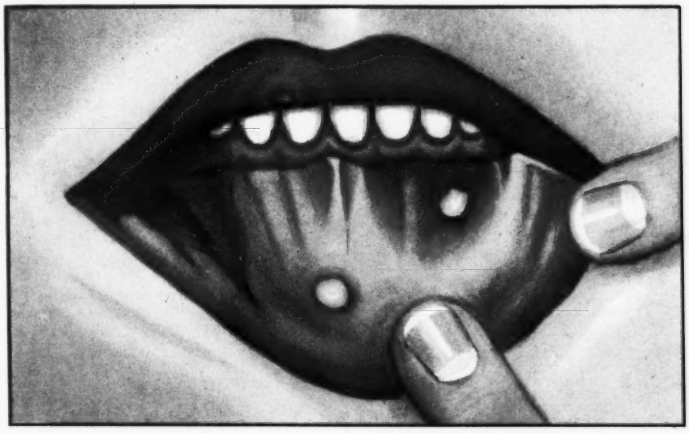
THE PEPSODENT CO.

919 North Michigan Avenue Chicago, Illinois

Dioxogen *in*

Mouth Pathology

FOR APHTHOUS ULCER, FOR INSTANCE



From time to time, we shall picture various conditions of mouth pathology in which Dioxogen—the Better Oxygen Antiseptic—is of decided benefit. This series will be reprinted and sent to dentists on request.

"As a cleansing agent and disinfectant, hydrogen dioxide has been extensively applied to diseased surfaces, such as canker sores and other ulcers."—Dr. J. P. Buckley, Past President American Dental Association. Dioxogen is the Better Oxygen Antiseptic. It is more stable, stronger, and purer than standard solutions of H_2O_2. It retains its strength. Dioxogen contains less than one-fourth the residue, and less than one-fourth the amount of free acid found in standard 10 volume solutions—and it is 25% stronger.

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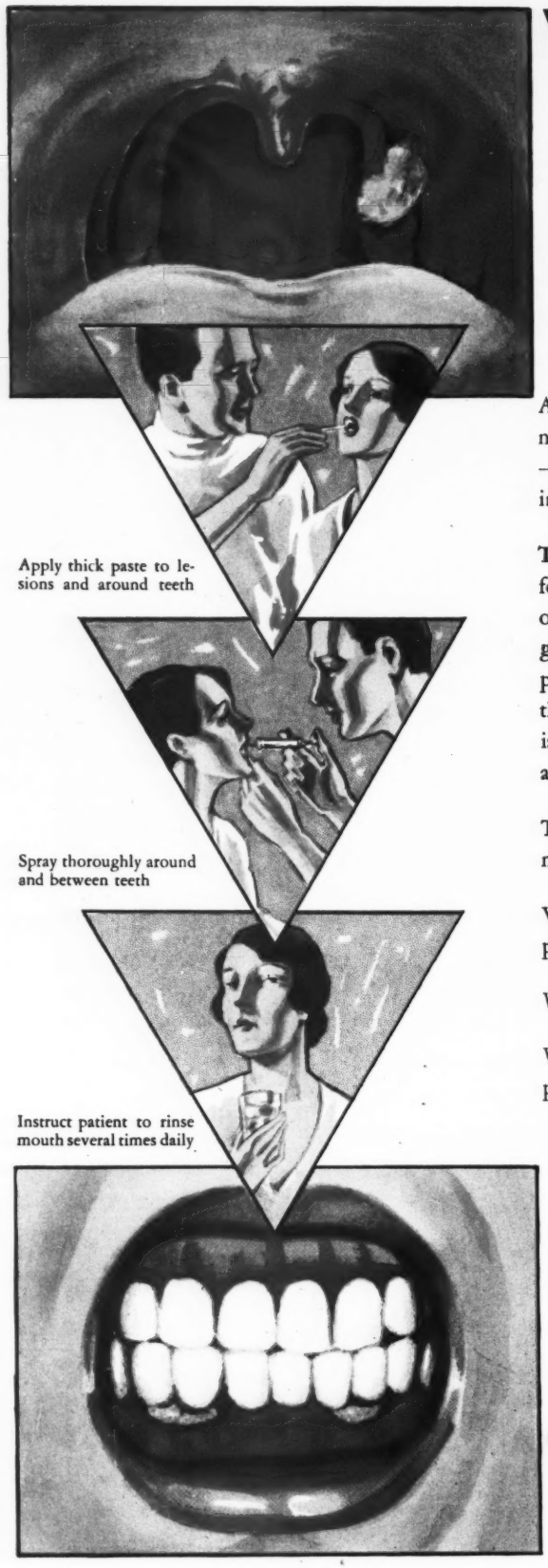
DD-3

Vincents infection


Apply thick paste to lesions and around teeth
Spray thoroughly around and between teeth
Instruct patient to rinse mouth several times daily

A yellowish or grayish-white patch on the tonsils or on the gingival margins—the smear shows Borrelia Vincent's and fusiform bacillus—and the diagnosis is "trench mouth" or necrotic gingivitis. The infection may start in the throat, but the gums seldom escape.

The painful sensitiveness of the gums and the feeling of discomfort in the affected teeth is greatly mitigated by the soothing effect of Vince. A thick paste of Vince is applied to the lesions and gums; it is rinsed off in about ten minutes; the procedure is repeated several times. Cavities, pockets and interdental spaces are thoroughly sprayed with freshly made Vince solution. The patient is instructed to rinse the mouth at home several times daily with a solution of Vince.

This simple treatment is proving effective not only in trench mouth but also in pyorrhea and other oral infections.

Vince, of course, recommends itself for after-treatment, for prophylaxis, and for regular mouth hygiene.

Vince paste—add few drops of water and stir.

Vince solution—one teaspoonful in a glass of water makes a two percent solution.

TRIAL SUPPLY AND LITERATURE SENT ON REQUEST.

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LETTERS

Just a few words to inform you that I for one would like to tell you how much I appreciate the new DENTAL DIGEST.—J. E. ULRICH, D.D.S., *Markle, Indiana*

Your magazine is fine, par excellence. —W. J. BAUMGARTNER, D.D.S., *Cedar Bluffs, Nebraska*

I want to thank you for the March and April issues of THE DENTAL DIGEST. I think it is the finest publication we have in dentistry.—H. J. LONGCAMP, D.D.S., *Aurora, Indiana*

I wish to add that I find THE DENTAL DIGEST a most valuable book. Every once in a while I reread them and get more out of them each time I do so.—A. H. BARDWAY, D.D.S., *Yeadon, Pennsylvania*

I enjoy all numbers of THE DENTAL DIGEST immensely, and have thought many times what a further boom to dental health something of this picture story of phases of dentistry would be, if we could only get it to the public. We have had no such magazine to the dental profession in my little time in the work.—JOHN G. LEFTWICH, D.D.S., *Tulsa, Oklahoma*

The December issue of THE DIGEST came to my desk this morning. Last week I gathered together the eleven numbers preceding, for the purpose of binding, and I spent some time studying them as a volume. I consider them a masterpiece in modern dental literature. The entire subject matter, illustrations, and editorials are clear, concise, and logical. Please accept my compliments and best wishes for the future.—E. A. THOMAS, D.D.S., *Hastings, Nebraska*

I have been a subscriber to the old DIGEST for several years and that makes me appreciate the new one so much more. —HARRY OKSNER, D.D.S., *St. Louis*

Your DENTAL DIGEST is fine and to me best in treatise and illustration of any I have taken in twenty-five years.—C. H. SMALL, D.D.S., *Titusville, Pennsylvania*

I think that those responsible for the fine magazine we now have in THE DENTAL DIGEST should feel very proud of its design, contents, and make-up, for it is undoubtedly the outstanding contribution to our profession among magazine publications. I have heard many words of praise and commendation, and not a single derogatory remark.—JOHN G. WELCH, D.D.S., *Dallas*

I have been a subscriber of THE DENTAL DIGEST for fifteen or twenty years. Permit me to congratulate you upon the improvements you have made in the magazine. Each issue is more interesting and instructive than the preceding issue.—E. R. STEALY, D.D.S., *Shenandoah, Iowa*

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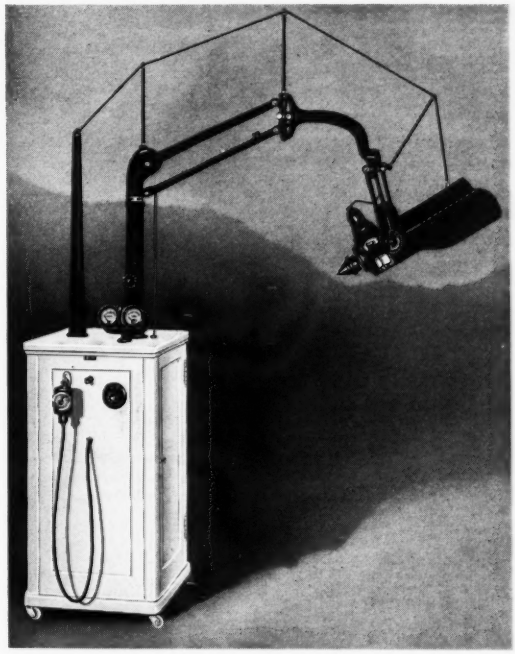

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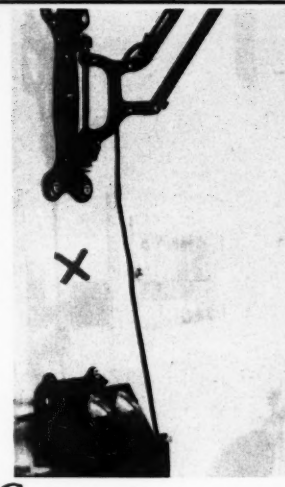

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